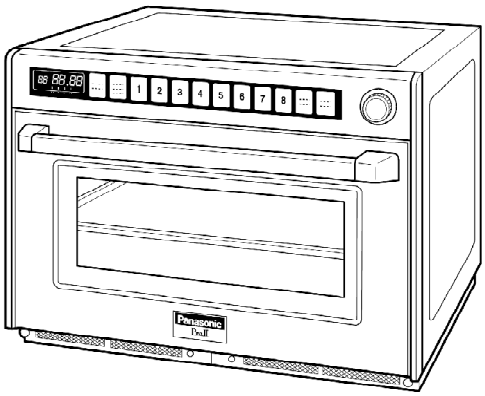
ORDER NO. MOD0108247C1
E10

Microwave Oven

NE-3280 / NE-2180 / NE-2180C



SPECIFICATIONS

Specifications

	NE-3280	NE-2180, NE-2180C
Power Source :	230/208 V AC Single Phase, 60Hz	
Power Requirement :	25.3/ 28A	18/ 20A
High frequency Output :	HIGH ·····3200 W(IEC705-88) MED ·····1600 W LOW ·····340 W DEF ·····170 W HOLD ·····0 W	HIGH ·····2100 W(IEC705-88) MED ·····1050 W LOW ·····340 W DEF ·····170 W HOLD ·····0 W
Oscillation Frequency :	2450 MHz	
Timer :	15 min. ····· HIGH and MED power for single stage. 60 min. ····· LOW, DEFROST and HOLD power for single stage.	
Outside Dimensions :	25-9/16" (W) × 20-3/4" (D) × 18-9/16" (H) 650 mm (W) × 526 mm (D) × 471 mm (H)	
Oven Cavity Dimensions :	21-1/16" (W) × 13" (D) × 9-7/8" (H) 535 mm (W) × 330 mm (D) × 250 mm (H)	
Weight :	136.4 lbs(62 kg)	116.6 lbs(53 kg)
Specification subject to change without notice.		

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⚠ WARNING

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

WARNING

1. This product should be serviced only by trained qualified personnel.
2. Though this product has been manufactured in compliance with:
   "Federal Performance Standard 21 CFR Subchapter J" (D.H.H.S.): U.S.A. models
   or "Radiation Emitting Devices Act" (Health and Welfare Canada): Canadian models
   It is very important all repairs should be made in accordance with procedures described in this manual to avoid being exposed to excessive microwave radiation.
3. Check for radiation leakage before and after every servicing according to the "procedure for measuring radiation leakage".
4. If the unit cannot be repaired on site, advise the customer not to use until unit be repaired.
5. Any serviceman who learns of any accident pertaining to microwave radiation leakage including the oven operating with open door should immediately notify the appropriate address listed below and Center for Devices and Radiological Health, DHHS.

IN U.S.A. (PASC)	Panasonic Services Company 50 Meadowland Parkway, Secaucus, New Jersey 07094 Attention: Technical Service Division. (201) 348-7000	IN PUERTO RICO (PSC)	PSC San Gabriel Industrial Park 65th Infantry Ave. Km.9.5. Carolina, Puerto Rico 00985 (809) 750-4300
		IN CANADA (PCI)	Panasonic Canada Inc. 5770 Ambler Drive, Mississauga, Ontario, L4W2T3 (905) 624-5010

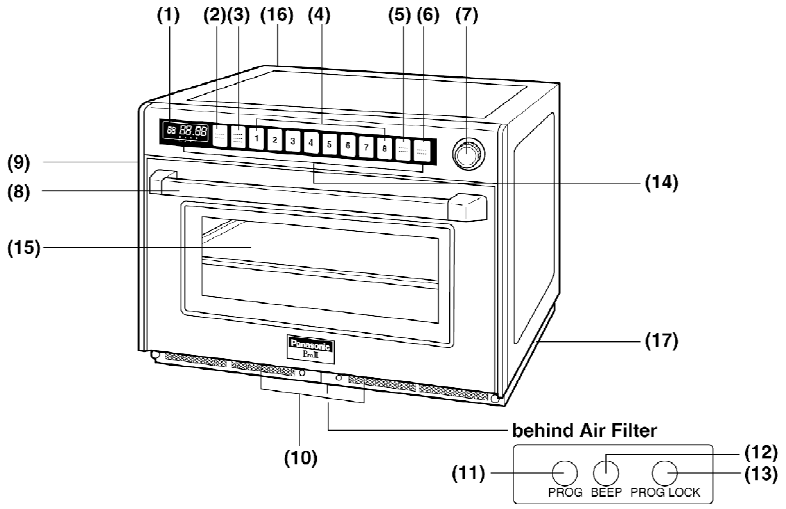
6. There are special components used in the microwave oven which are important for safety. These parts are marked with a ⚠ on the replacement parts list. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent microwave leakage, shock, fire, or other hazards. Do not modify the original design.

PRECAUTIONS TO BE OBSERVED BEFORE AND DURING SERVICING TO AVOID POSSIBLE EXPOSURE TO EXCESSIVE MICROWAVE ENERGY

(A) Do not operate or allow the oven to be operated with the door open.
(B) Make the following safety checks on all ovens to be serviced before activating the magnetron or other microwave source, and make repairs as necessary:
   (1) Interlock operation
   (2) Proper door closing
   (3) Seal and sealing surfaces (arcing, wear, and other damage)
   (4) Damage to or loosening of hinges and latches
   (5) Evidence of dropping or abuse
(C) Before turning on microwave power for any service test or inspection within the microwave generating compartments, check the magnetron, waveguide or transmission line, and cavity for proper alignment, integrity and connections.
(D) Any defective or misadjusted components in the interlock, monitor, door seal, and microwave generation and transmission systems shall be repaired, replaced, or adjusted by procedures described in this manual before the oven is released to the owner.
(E) A microwave leakage check to verify compliance with the Federal Performance Standard should be performed on each oven prior to release to the owner.

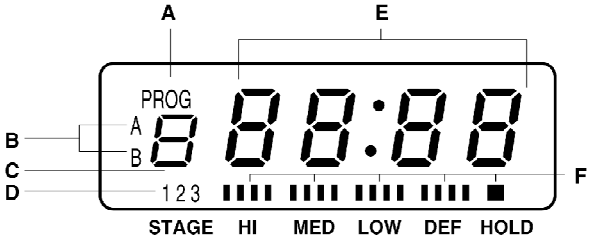
Panasonic®

1. CONTROL PANEL



(1) Digital Display Window(see below)
(2) Power Level Selector Pad
(3) Memory Shift Pad
(4) Memory Pad
(5) Stop/Clear Time Pad
(6) Start Pad
(7) Timer Dial
(8) Door Handle
(9) Oven Lamp Cover
(10) Air Filter
(11) Program Entry Button (behind Air Filters)
(12) Beep Control Button(behind Air Filters)
(13) Program Lock Button(behind Air Filters)
(14) Control Panel
(15) Middle Shelf
(16) Voltage Adjustment Cover (rear side of the oven)
(17) Rating Plate Location

Digital Display Window Indicator Locations



A—Program Display
B—Memory Code Display
C—Memory Pad Number Display
D—Stage Heating Indicator
E—Heating Time Display (min.sec.)

F—Power Level Indicator
HI(HIGH)
MED(MEDIUM)
LOW
DEF(DEFROST)
HOLD

2. OPERATION PROCEDURE

1. Manual heating for single stage

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	0
3. Tap [POWER] pad once. (Set to High power)	0 1 HI
4. Set the desired heating time by turning the timer dial. (Set to 2 minutes)	2:00 1 HI
5. Tap [START] pad.	1:59 1 HI
6. When the time is up, you hear 3 beeps sound.	0
7. Open the door and take out the water load. The display goes back to previously setting time.	2:00 1 HI
8. Close the door. 1 minute later, display will return blank.	

2. Manual heating for 2nd or 3rd stage

OPERATION	DISPLAY
1. Follow step 1 to 4 for single stage.	2:00 1 HI
2. Tap [POWER] pad twice. (Set to MED power)	0 1 2 MED
3. Set the desired heating time by turning the timer dial. (Set to 1 minute)	1:00 1 2 MED
4. Tap [START] pad. (1st stage)	2:59 1 2 HI MED
5. When the 1st stage time is up, you hear 1 beep sound. (2nd stage)	59 2 MED
6. When the time is up, you hear 3 beeps sound.	0
7. Open the door and take out the water load. The display goes back to previously setting time.	3:00 1 2 HI MED
8. Close the door. 1 minute later, display will return blank.	

NOTE: For a 3rd stage heating cycle, select a further power level and time between steps 3 and 4 above.

3. Memory setting for single stage

OPERATION	DISPLAY
1. Display must be blank before programming can begin. Touch (PROG) pad.	PROG
2. Tap 5 pad. (Set to memory pad 5) NOTE: Previously selected power and time will appear.	PROG A 5 1
3. Tap POWER pad once. (Set to High power)	PROG A 5 1 HI
4. Set the desired heating time by turning the timer dial. (Set to 1 minute)	PROG A 5 1 1:00 HI
5. Touch (PROG) pad again.	PROG A 5 1 1:00 HI
6. 3 seconds after, the display window will go blank.	

TO PROGRAM MEMORY AREA B: Follow steps 1 above. Touch the Memory Shift pad A►B and small "B" will appear beneath the flashing "PROG".
Touch the memory pad you wish to program, and the previously selected time and power level will appear in the display window.

NOTE: Once the Memory area B has been selected it cannot be changed back to Memory area A. If you do not require Memory area B, cancel it by touching the cancel pad and begin again.

4. Memory setting for 2nd or 3rd stage

OPERATION	DISPLAY
1. Follow steps 1 to 4 for memory setting for single stage.	PROG A 5 1 1:00 HI
2. Tap POWER pad twice. (Set to MED power)	PROG A 5 1 2 1:0 MED
3. Set the desired heating time by turning the timer dial. (Set to 2 minutes)	PROG A 5 1 2 2:00 MED
4. Touch (PROG) pad again. Heating time is displayed by adding single and 2nd stage heating time.	PROG A 5 1 2 3:00 HI MED
5. 3 seconds after, the display window will become blank.	

NOTE: For a 3rd stage heating cycle, select a further power level and dial in a time, between steps 3 and 4 above.

5. Memory pad heating

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Open the door. Place a water load in the oven and close the door.	0
3. Tap [5] pad.	PROG A 5 1 2 3:00 HI MED
4. Tap [START] pad. (1st stage)	PROG A 5 1 2 2:59 HI MED
5. (2nd stage)	PROG A 5 2 1:59 MED
6. When the time is up, you hear 3 beeps sounds.	0
7. Open the door and take out the water load.	0
8. Close the door. Display will return blank after 1 minute.	

NOTE: When program is locked, heating can be started automatically by tapping memory pad.

6. To Read the Cycle Counter

OPERATION	DISPLAY
1.Open the door and close.	0
2. While pressing (BEEP) switch, press (PROG) switch. The display shows the number of times the oven has been used.	6666
3. 3 seconds later, the display will go blank.	

NOTE: Total cumulative number includes programming memory heating and manual heating number of times has been used. Cooking times over 99,999 times will be back 0.

7. To Activate Program Lock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle. Do not open the door.	
2. Press and hold (PROG LOCK) switch until the display show "PROG", "P" and "L". (for more than 5 seconds)	PROG
3. Program lock feature now activated.	PROG PL

8. To Release Program Lock

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Press and hold (PROG LOCK) switch until the display will show "PROG" and "P". (for more than 5 seconds)	0
3. Program lock feature is now deactivated.	PROG P

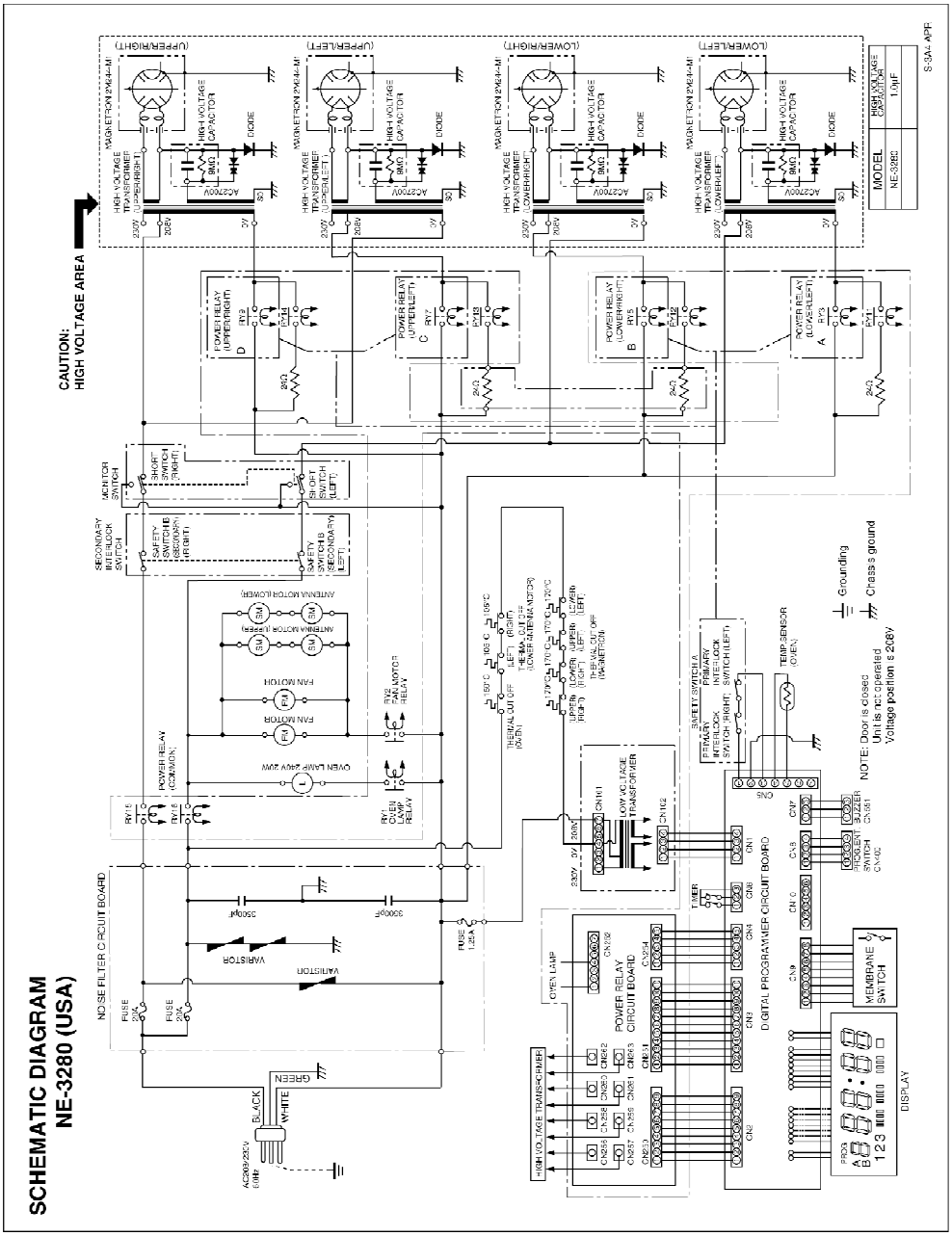
9. To Select Beep Tone Options

OPERATION	DISPLAY
1. Plug the power supply cord into wall receptacle.	
2. Press (PROG) switch.	PROG
3. Press (BEEP) switch.	PROG 1 3 bE EP
4. Select the desired sound loudness level by pressing (BEEP) switch. Repeated pressing of (BEEP) switch will lower the loudness and all the way to silent.	PROG 1 2 bE EP
5. Press (PROG) switch again.	PROG 1 2 bE EP
6. 3 seconds later display window will go blank.	

To select length of tone at end of heating cycle there are 2 options.
A. 3 beeps (factory setting)
B. 60 seconds of short beeps.
To set for 60 seconds of short beeps.

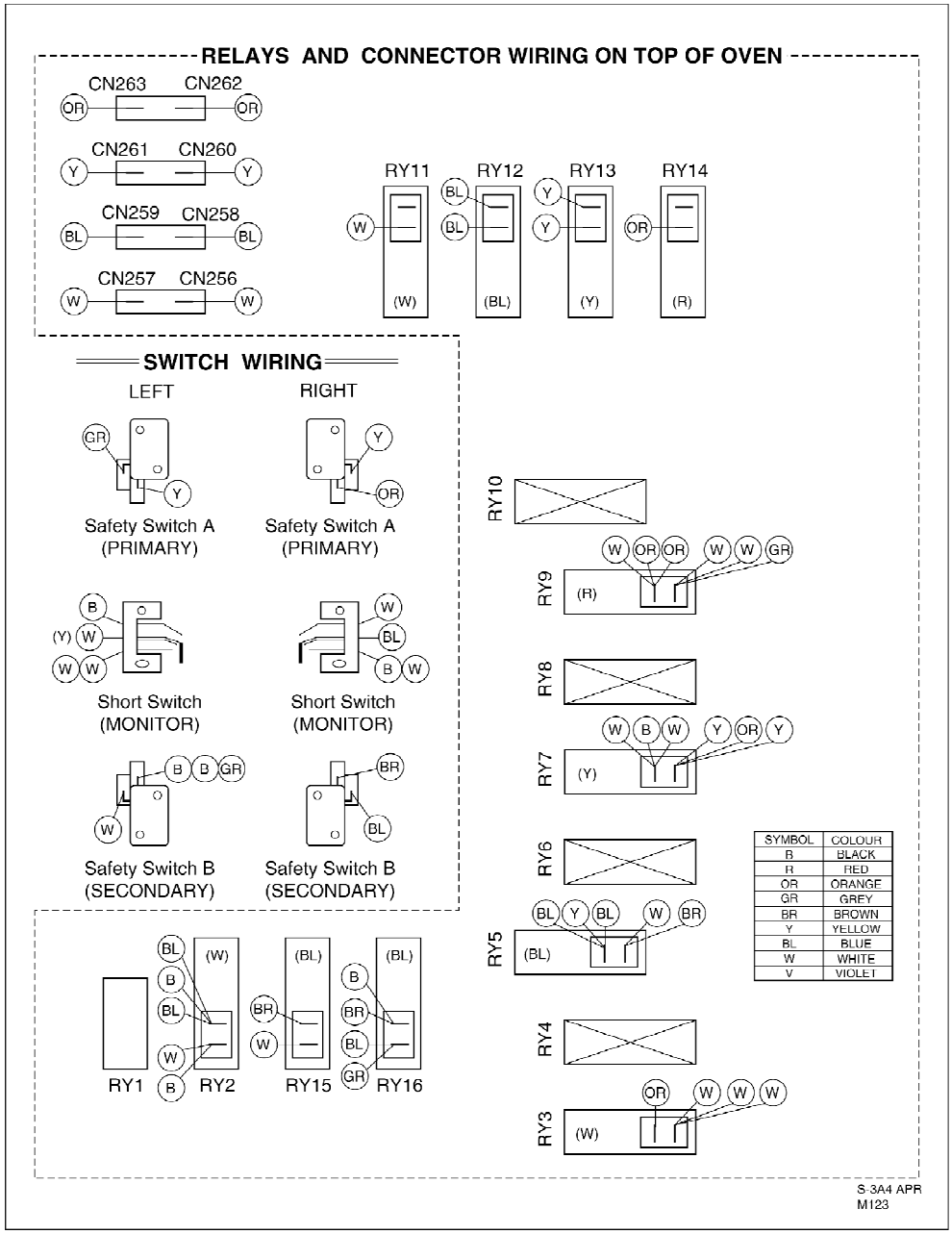
OPERATION	DISPLAY
1. Complete steps 1-4 above.	PROG 1 2 bE EP
2. Press (PROG) switch and quickly select the desired tone length by pressing (BEEP) switch. "1" illuminated 3 beeps. "2" illuminated 60 seconds of beeps.	PROG 2 2 bE EP
3. Press (PROG) switch again.	PROG 2 2 bE EP
4. 3 seconds later, the display will go blank.	

3. SCHEMATIC DIAGRAM NE-3280 (USA)

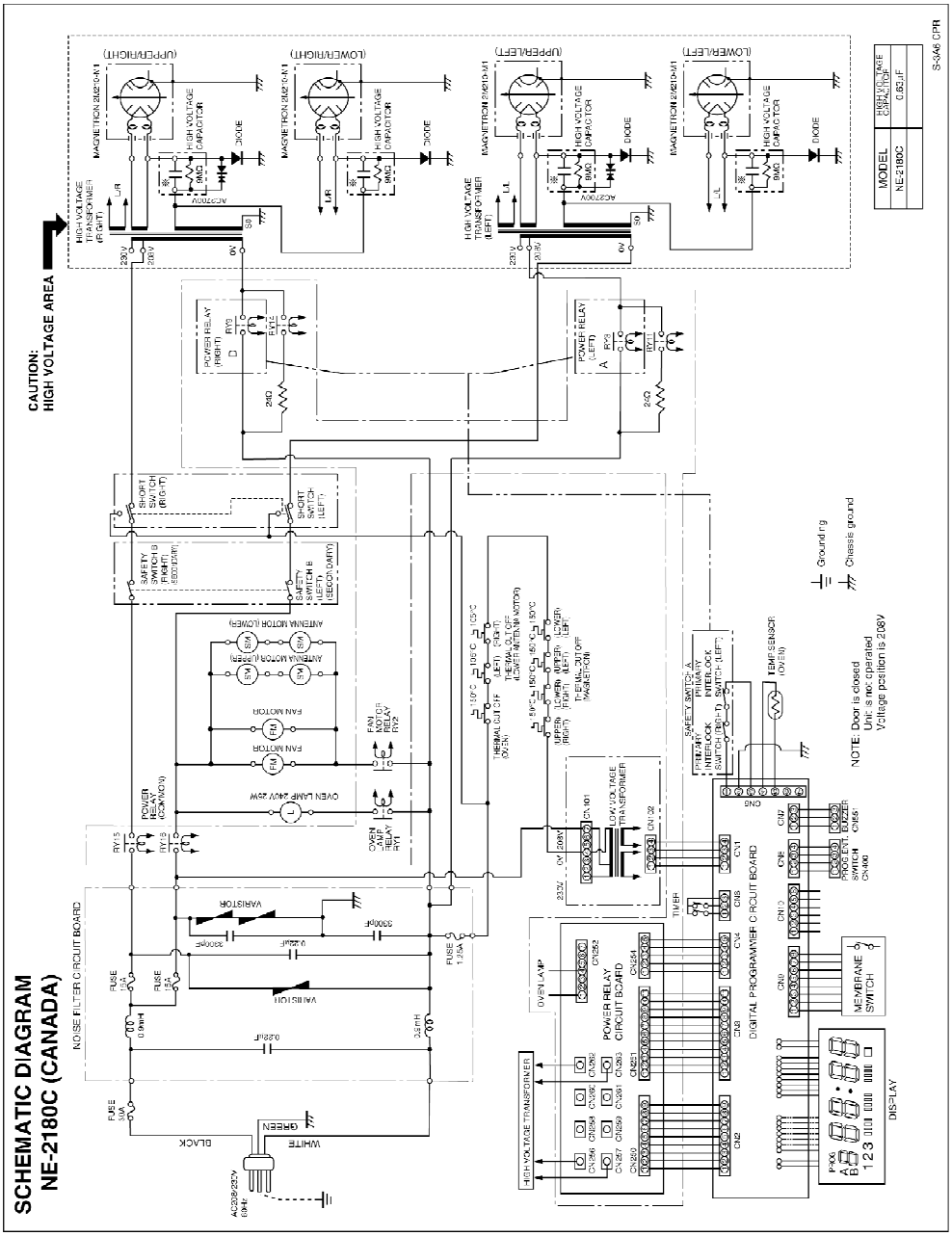


4. WIRING DIAGRAM NE-3280 (USA)

NOTE: When replacing, check the lead wire colour as shown.

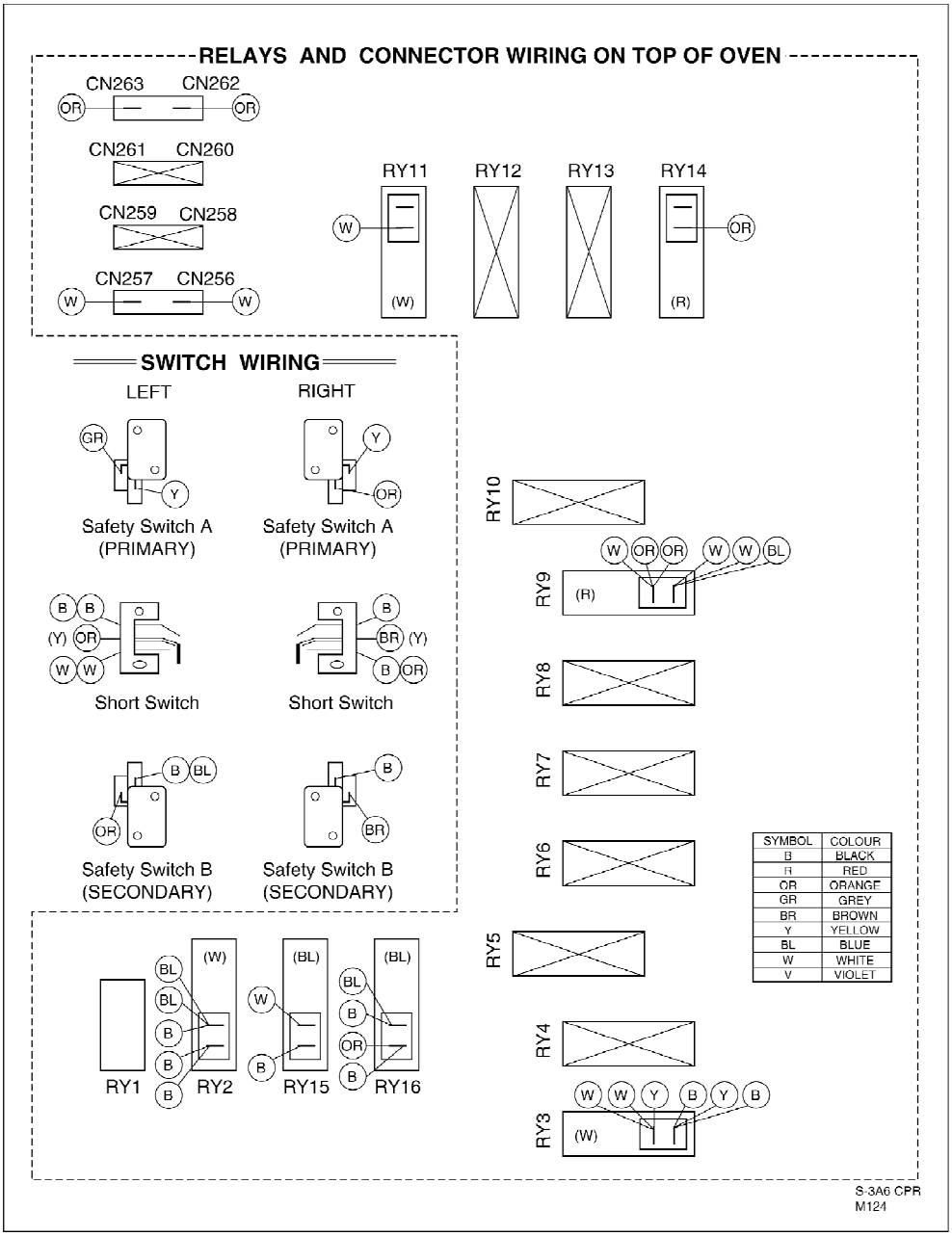


5. SCHEMATIC DIAGRAM NE-2180C (CANADA)

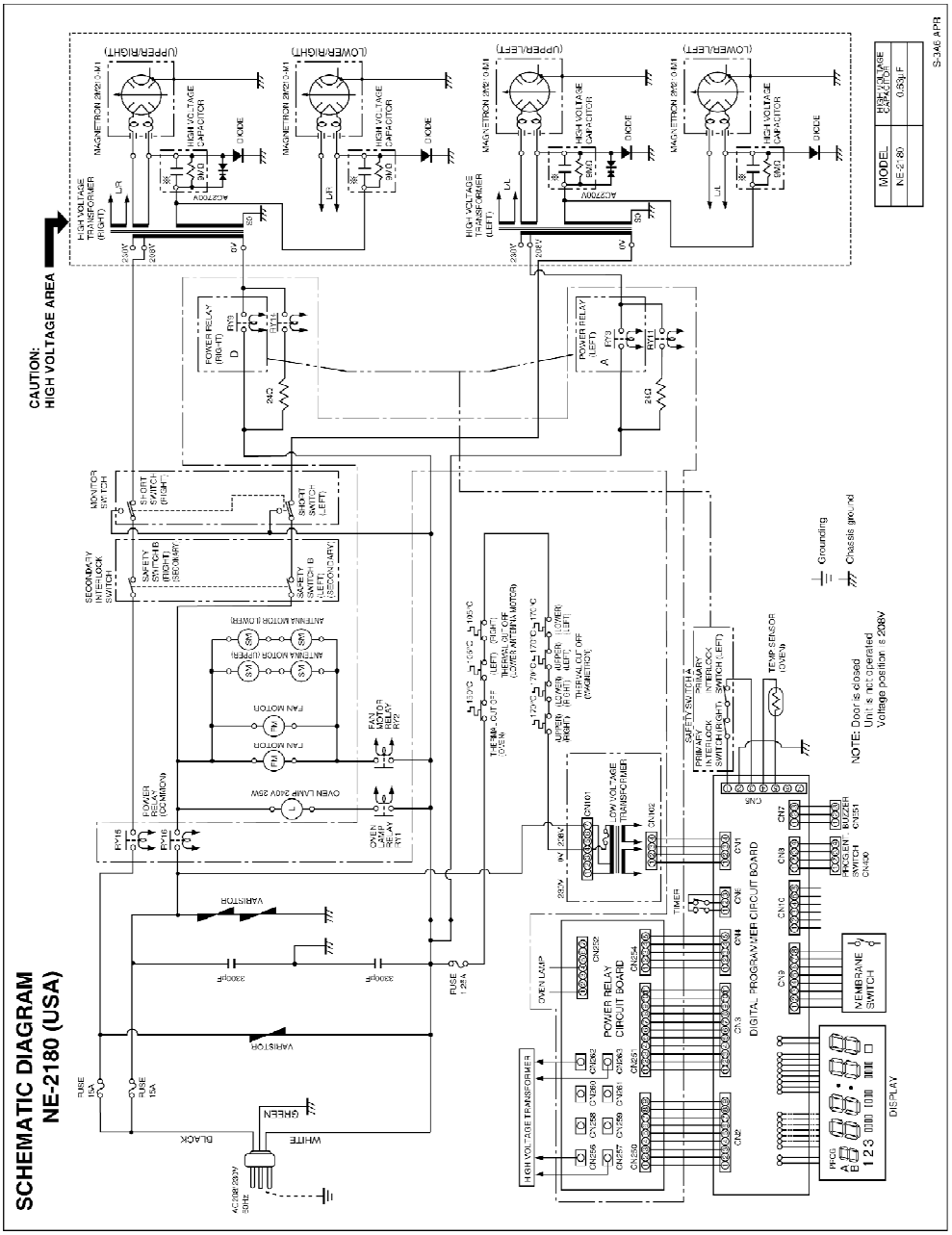


6. WIRING DIAGRAM NE-2180C (CANADA)

NOTE: When replacing, check the lead wire colour as shown.

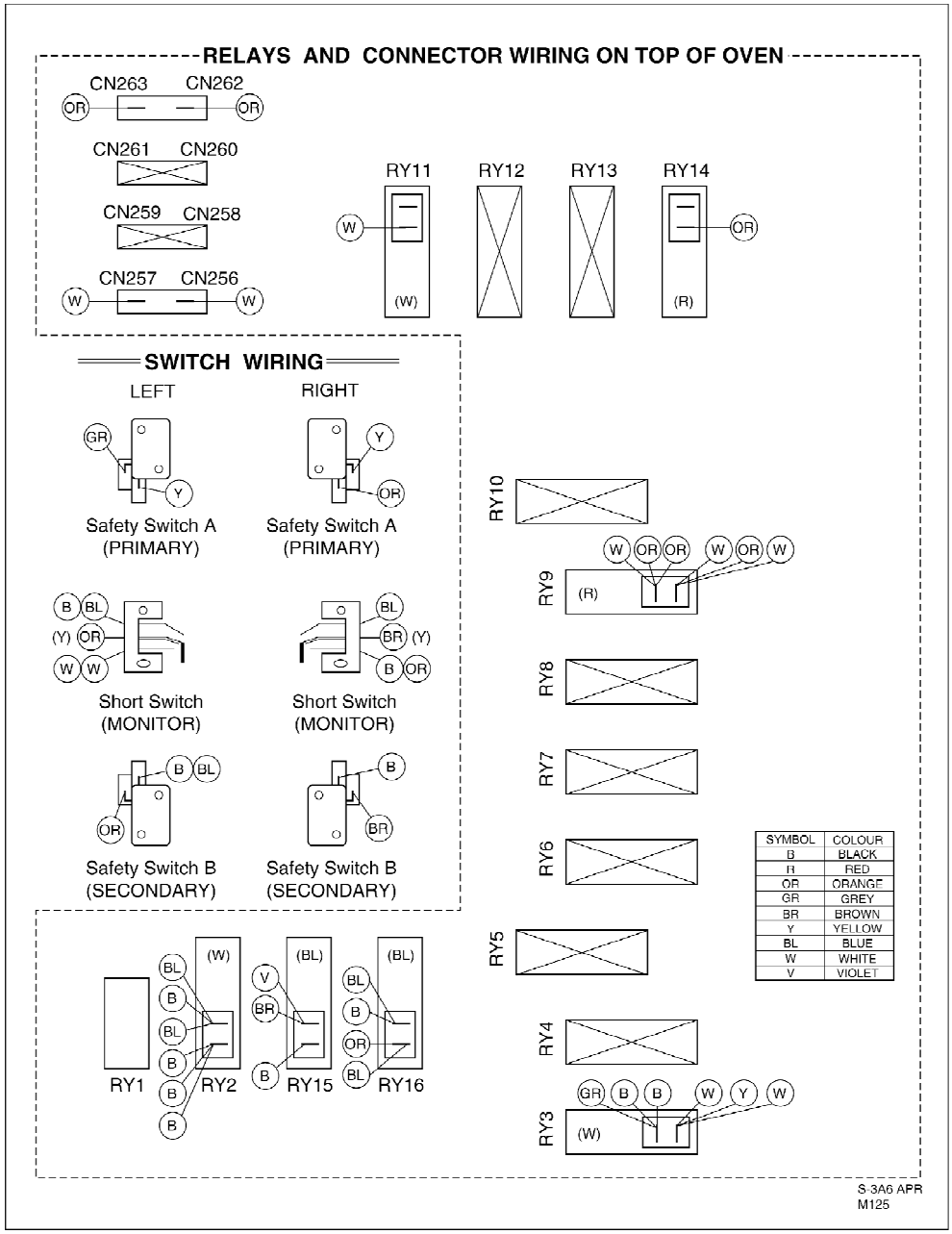


7. SCHEMATIC DIAGRAM NE-2180 (USA)



8. WIRING DIAGRAM NE-2180 (USA)

NOTE: When replacing, check the lead wire colour as shown.



9. DESCRIPTION OF OPERATING SEQUENCE

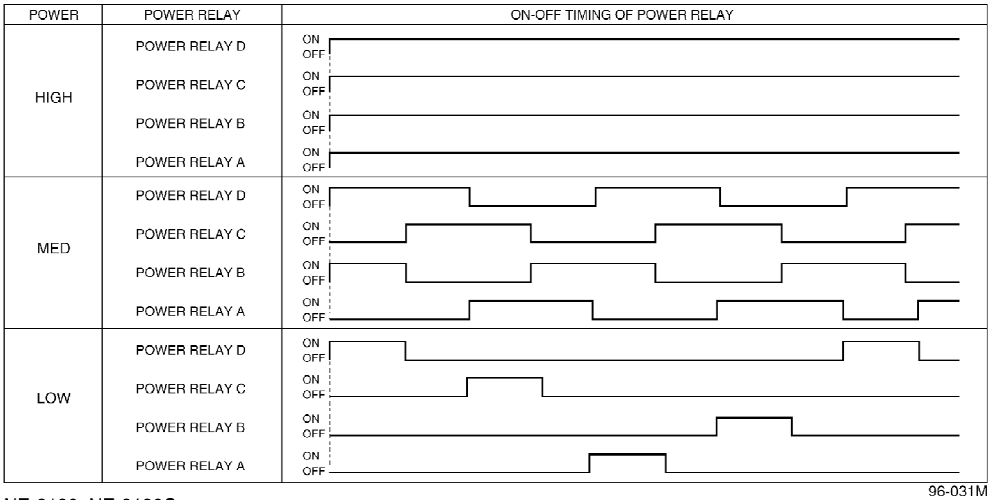
Variable power cooking control

The coil of power relays are energized intermittently by the digital programmer circuit, when the oven is set at any power selection except for High power position. The digital programmer circuit controls the ON-OFF time of the power relays contacts in order to vary the output power of the microwave oven. The relation between indications on the control panel and the output power of the microwave oven is as shown in table.

NOTE:

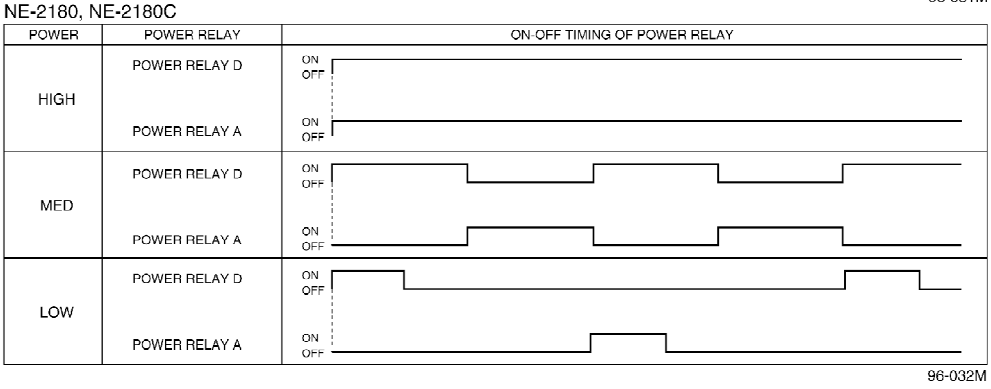
ON-OFF time of power relays are changed by digital programmer circuit when remaining cooking time or selected cooking time are within 8 minutes at MED, LOW and Defrost cooking mode.

NE-3280



96-031M

NE-2180, NE-2180C



96-032M

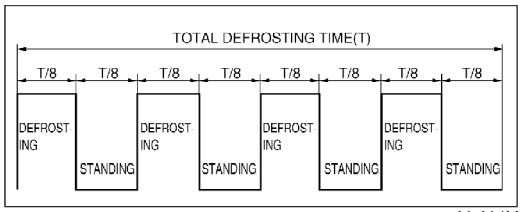
9.1. Defrost control

When defrost power and defrosting time is selected and Start pad is touched:

1. **The digital programmer circuit (DPC) divides the total defrosting time into 8 equal periods, consisting of four defrosting periods, each followed by a standing period. (See figure)**
2. **During defrosting power periods, power relay ON-OFF time is controlled at Low power mode by DPC.**
3. **During Standing periods, power relay is always open resulting in no microwave power.**

NOTE:

Defrost time selected is converted into seconds by the DPC but display will show selected time in minutes and seconds as programmed. The total number of seconds is divided into 8 time periods. The remainder (seconds not equally divisible by 8) are added to the last standing time period.



96-004M

10. CAUTIONS TO BE OBSERVED WHEN TROUBLESHOOTING

Unlike many other appliances, the microwave oven is high-voltage, high-current equipment. Though it is free from danger in ordinary use, extreme care should be taken during repair.

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

10.1. Check the grounding

Do not operate on a 2-wire extension cord. The microwave oven is designed to be used when grounded. It is imperative, therefore, to make sure it is grounded properly before beginning repair work.

10.2. Warning about the electric charge in the high voltage capacitor (/ Figure).

For about 30 seconds after the oven is turned off, an electric charge remains in the high voltage capacitor. When replacing or checking parts, remove the power plug from the outlet and short the terminal of the high voltage capacitor (terminal of lead wire from diode) to chassis ground with and insulated handle screwdriver or insulated jumper lead wire to discharge.

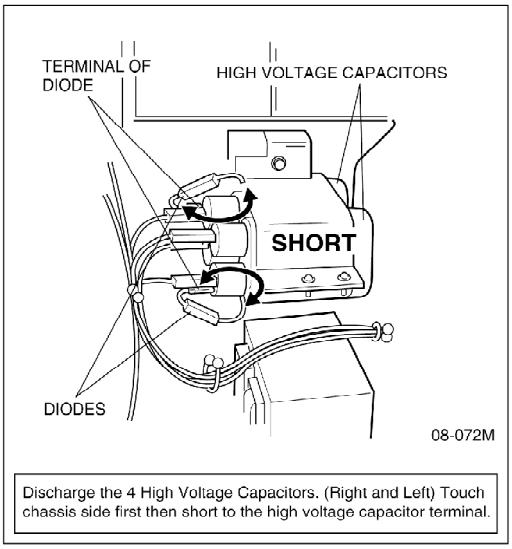
WARNING
There is high-voltage present, with high-current capabilities in the circuits of the high voltage winding and filament winding of the high voltage transformer. It is extremely dangerous to work on or near these circuits with oven energized. / DO NOT measure the voltage in the high voltage circuit including filament voltage of magnetron.

WARNING
Never touch any circuit wiring with your hand nor with an insulated tool during operation.

10.3. When parts must be replaced, remove the power plug from the outlet.

10.4. When the 15 Amp. (NE-2180/NE-2180C) or 20 Amp. (NE-3280)

fuse is blown due to the operation of interlock monitor, replace the necessary components according to the following table.



Discharge the 4 High Voltage Capacitors. (Right and Left) Touch chassis side first then short to the high voltage capacitor terminal.

10.5. Avoid inserting nails, wire, etc. through any holes in the unit during operation.

Never insert a wire, nail or any other metal object through the lamp holes on the cavity or any other holes or gaps, because such objects may work as an antenna and cause microwave leakage.

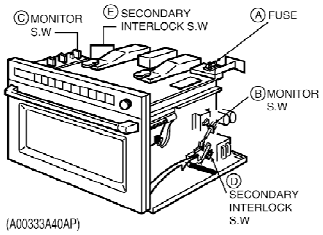
10.6. Confirm after repair

1. **After repair or replacement of parts, make sure that the screws of the oven, etc. are neither loose nor missing.**
2. **Make sure that all electrical connections are tight before inserting the plug into the wall outlet.**
3. **Check for microwave energy leakage. (Refer to procedure for measuring microwave energy leakage.)**

— For USA models only —

WARNING — FOR CONTINUED PROTECTION AGAINST EXCESSIVE RADIATION EMISSION REPLACE ONLY WITH THE SAME TYPE COMPONENT MARKED BY "⚠" WHEN REPLACING FUSE CHECK OPERATION OF DOOR INTERLOCK AND INTERLOCK MONITOR CIRCUIT AS MARKED BY "⚠" AND REPLACE ANY FAULTY COMPONENTS.

LOCATION OF COMPONENTS	NE-3280		NE-2180		
	TERMINAL HOUSING		TERMINAL HOUSING		CHECK WHICH FUSE IS BLOWN : (DISTINGUISHED BY COLOR OF PLASTIC TERMINAL HOUSING)
	BLACK	WHITE	BLACK	WHITE	
A	⚠	⚠	—	—	FUSE : TYPE MDA/RATED 20A 250V (ANE6595P40AP)
	—	—	⚠	⚠	FUSE : TYPE MDA/RATED 15A 250V (ANE6230P30AP)
B	—	⚠	—	⚠	MONITOR S.W. (RIGHT) :TYPE303GP (A61583030GP)
C	⚠	—	⚠	—	MONITOR S.W. (LEFT) :TYPE305GP (A61583050GP)
D	—	—	⚠	⚠	SECONDARY INTERLOCK S.W. (RIGHT) : TYPE V-15G-3C26 (ANE6142-F60)
	⚠	⚠	—	—	SECONDARY INTERLOCK S.W. (RIGHT) : TYPE A-20G7-3C-108 (A61423030GP)
E	—	—	⚠	⚠	SECONDARY INTERLOCK S.W. (LEFT) : TYPE V-15G-3C26 (ANE6142-F60)
	⚠	⚠	—	—	SECONDARY INTERLOCK S.W. (LEFT) : TYPE A-20G7-3C-108 (A61423030GP)



U.S.P4942516 (A00333A40AP)

11. DISASSEMBLY AND PARTS REPLACEMENT

CAUTION
Servicemen should remove their watches whenever working close to or replacing the magnetron.

11.1. Magnetrons (Upper and Lower)

Upper magnetrons (Right and Left)

1. Discharge electric charge remaining on the high voltage capacitors.
2. Remove the entire rear panel by removing screws as shown in figure.
3. Disconnect all lead wires from magnetron and thermal cutout.
4. Remove the 4 screws holding magnetron.
5. Remove 2 screws holding thermal cutout.
6. Remove the mounting bracket from magnetron and install it on the new magnetron.

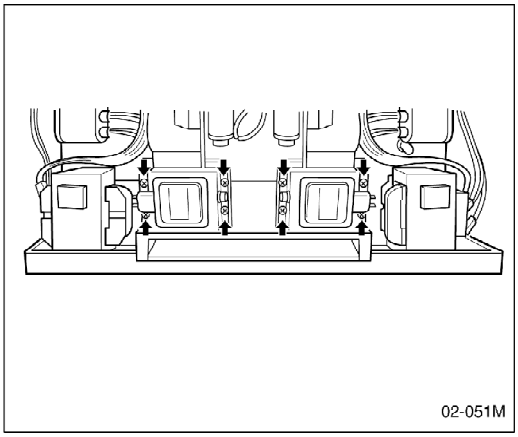
Lower magnetrons (Right and Left)

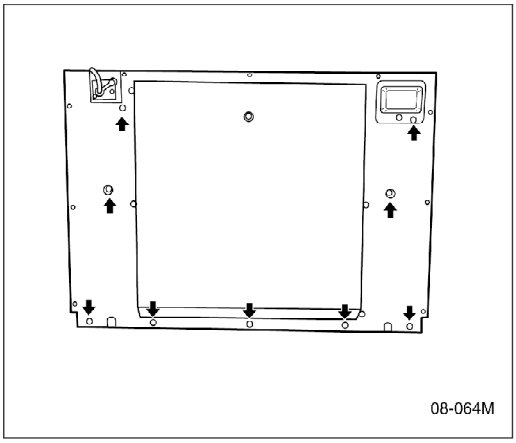
1. Discharge electric charge remaining on the high voltage capacitors.
2. Remove the entire rear panel by removing screws as shown in figure.
3. Disconnect all lead wires from magnetron and thermal cutout.
4. Remove the 4 screws holding magnetron.
5. Remove 2 screws holding thermal cutout.
6. Remove the air guide from magnetron and install it on the new magnetron.

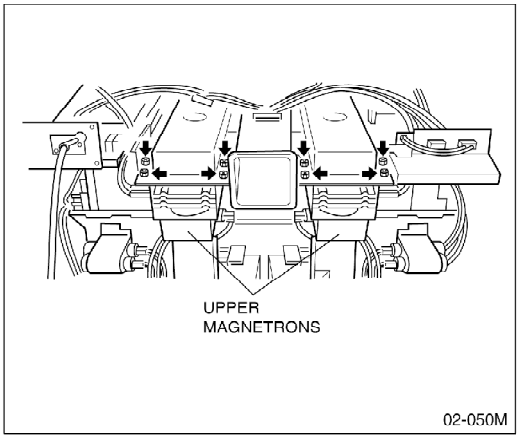
NOTE:
To prevent microwave leakage, tighten mounting screws properly making sure there is no gap between the waveguide and the magnetron.

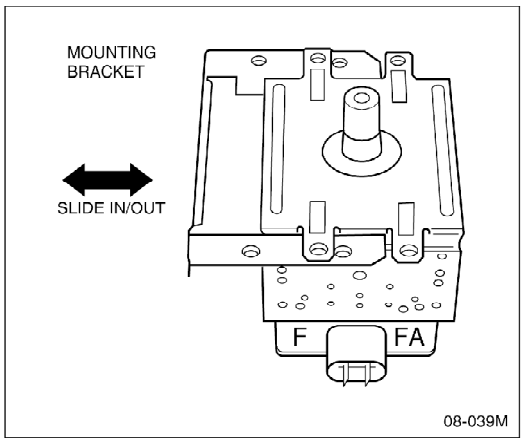
CAUTION

When connecting 2 filament lead wires to the magnetron terminals, be sure to connect the lead wires in the correct position. The lead wire with blue connector should be connected to “FA terminal” and white one should be connected to “F terminal”. (See Figure)









11.2. Digital programmer circuit board

1. **Remove grounding screw for membrane switch and D.P.C. ground.**
2. **Remove 2 screws holding control panel assembly to detach it from main unit then remove connectors.**
3. **Remove 2 screws holding the D.P.C. board and remove the board by freeing catch hooks.**

NOTE:
Please use care in handling the power supply P.C.B. and D.P.C. board to avoid damage.

11.3. Low voltage transformer and/or power relays

NOTE:
Be sure to ground any static electric charge built up on your body before handling the DPC.

1. **Using solder wick or a desoldering tool and 30W soldering iron,**

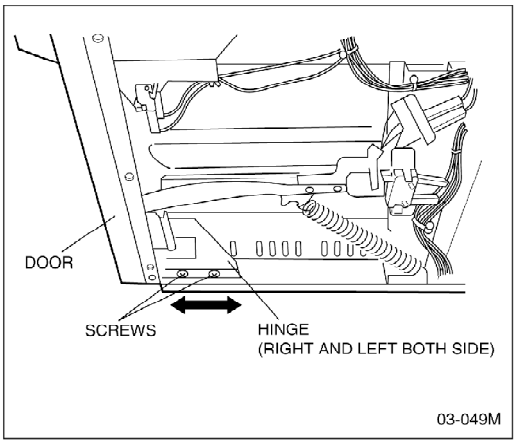
carefully remove all solder from the terminal pins of the low voltage transformer and/or power relays.

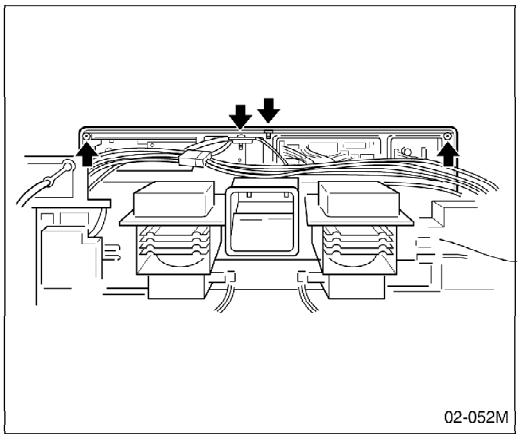
NOTE:
Do not use a soldering iron or desoldering tool of more than 30 watts on DPC contacts.

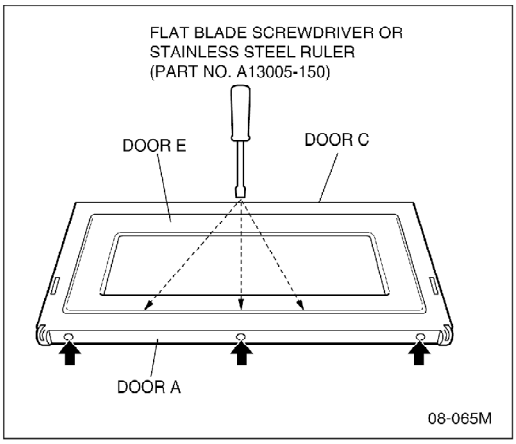
2. **With all the terminal pins cleaned and separated from DPC contacts, remove the defective transformer/power relays and install new transformer/power relays making sure all terminal pins are inserted completely. Resolder all terminal contacts carefully.**

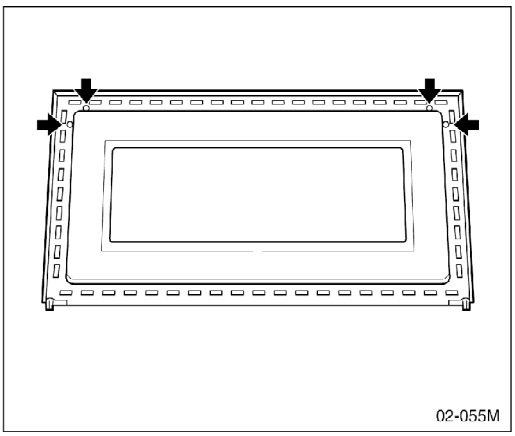
11.4. Disassembly of door assembly

1. **Detach the door spring ends from right and left door arms.**
2. **Remove the arm lever right and left by removing 2 screws each on both sides.**
3. **Remove the sashes right and left by removing 1 screw each on both sides.**
4. **By holding the door assembly, remove the right and left sides door hinge pins. The door assembly is now free from the oven.**
5. **Remove 3 screws holding the door A.**
6. **Remove the door C by using a flat screwdriver as figure.**
7. **Remove 4 screws holding door handle.**
8. **Separate door A and door E.**
9. **Remove the door arms by removing 1 pin each on both sides.**









11.5. Upper antenna (Right and Left)

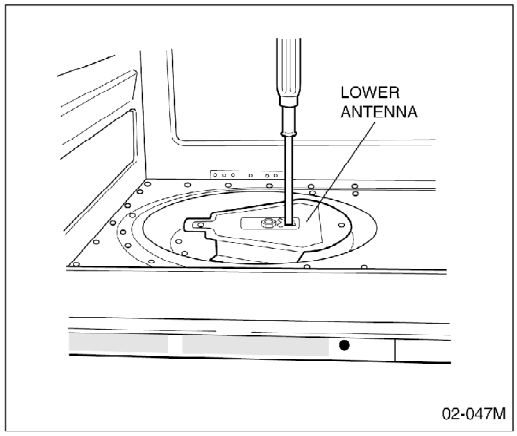
Upper antenna (Right and Left)

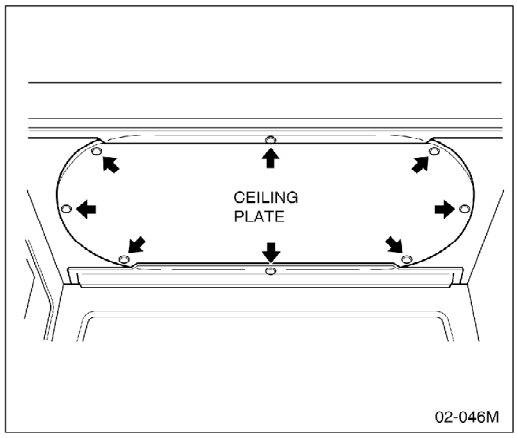
1. **Remove 8 plastic clips holding ceiling plate and exhaust guides by using flat screwdriver or the like.**
2. **Remove 2 screws holding upper antenna assy by inserting screwdriver through the opening on the antenna as shown in figure.**

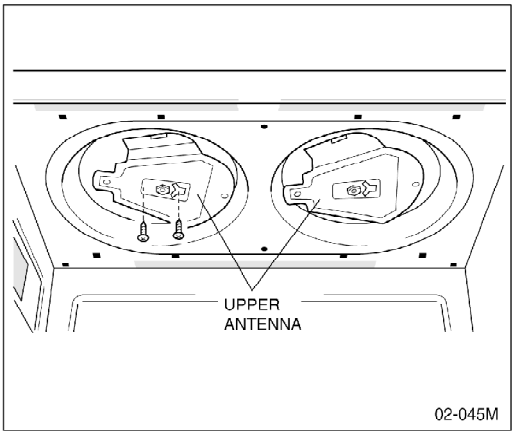
11.6. Lower antenna (Right and Left)

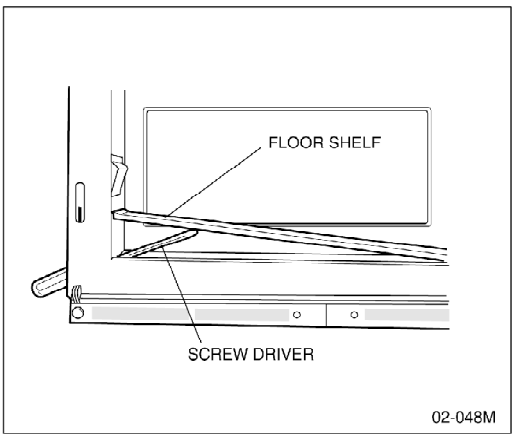
Lower antenna (Right and Left)

1. **To remove the floor shelf, insert a screwdriver through the openings on the right and left sides of the oven cavity and carefully lift the floor shelf as shown in figure.**
2. **Remove 2 screws holding lower antenna assy by inserting screwdriver through the opening on the antenna as shown in figure.**









11.7. Replacement of temperature sensor (Thermal protector)

1. Cut 2 lead wires at the top of sensor terminals.
2. Remove 2 screws holding temp sensor and replace with new one.
3. Solder the lead wires securely to the sensor terminals.

11.8. Replacement of antenna motors (upper and lower)

1. The upper antenna motor may be removed by disconnecting the lead wire connectors and removing its 2 mounting screws.
2. To remove the lower antenna motor, carefully place the unit on its left side.
3. Remove the motor cover by removing 2 screws and follow same procedure as for upper antenna.

CAUTION
There are two types of antenna motors. Therefore please replace with correct one as showing below.

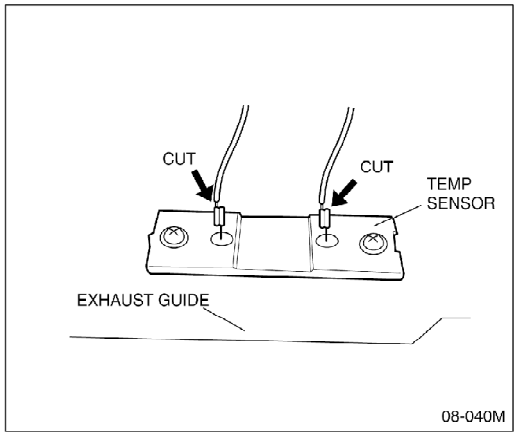
Upper Antenna Motor	PART NO.: ANE61446030AP (RATED: 120V)
Lower Antenna Motor	PART NO.: A6144-3280 (RATED: 120V)

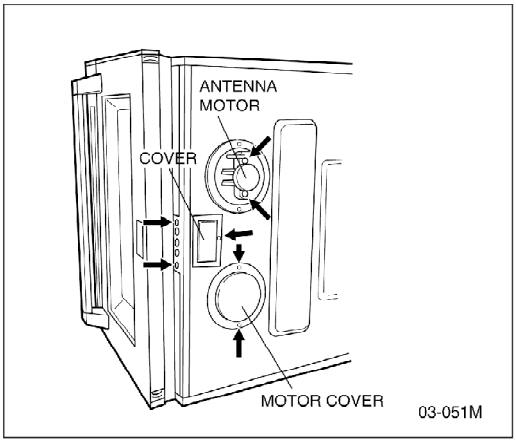
11.9. Program, Beep and Program Lock switches board. (P.C.Board F assy)

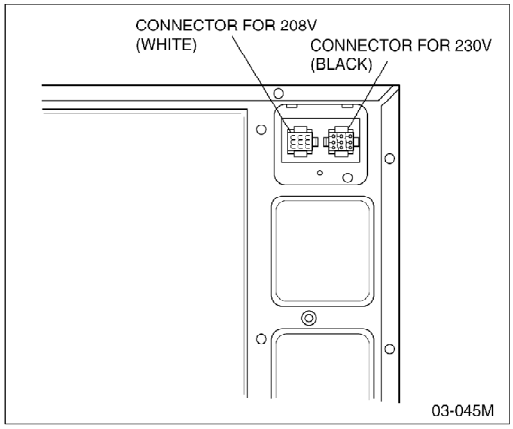
1. Remove air filters.
2. Place the unit on its left side carefully.
3. Peel off panel B.
4. Remove 1 screw holding cover. (Figure)
5. Remove 2 screws holding switch assy.
6. Remove connector and remove 2 screws holding switch board.

11.10. Voltage selection (208V → 230V)

1. Remove 1 screw holding voltage selection connector cover.
2. Plug the connector out from white (208V) socket and plug the connector into the black (230V) socket.







12. COMPONENT TEST PROCEDURE

CAUTION

1. High voltage is present at the high voltage terminal of the high voltage transformer during any cook cycle.
2. It is neither necessary nor advisable to attempt measurement of the high voltage.
3. Before touching any oven components, or wiring, always unplug the oven from its power source and discharge the high voltage capacitor.

12.1. Primary Interlock Switch (SAFETY SWITCH A), Secondary Interlock Switch (SAFETY SWITCH B) and Power Relay

1. Unplug the power cable.
2. Unplug lead wire connectors to Power Relay (RY2-16) and verify continuity of the power relay terminals.
3. Unplug lead wire connectors to Primary Interlock Switch and Secondary Interlock Switch.
4. Test the continuity of switches with the door in both open and closed positions with ohm meter (low scale). Normal continuity

readings should be as follows.

	Door Opened	Door Closed
Primary Interelock Switch	Ω (open)	0 Ω (close)
Secondary Interlock Switch	Ω (open)	0 Ω (close)
Power Relays	Ω (open)	0 Ω (close)

12.2. Short/Monitor Switch (Both Right and Left)

	Door Opened	Door Closed
NO Terminals	Ω (open)	0 Ω (close)
NC Terminals	0 Ω (close)	Ω (open)

12.3. High voltage transformer

1. Remove connections from the transformer terminals and check continuity.
2. Normal (cold) resistance readings should be as follows:

   - Secondary winding Approx. 40 Ω — 100 Ω
   - Filament winding Approx. 0 Ω
   - Primary winding Approx. 0 Ω — 3 Ω

12.4. High voltage capacitor

1. Check continuity of capacitor with meter on highest OHM scale.
2. A normal capacitor will show continuity for a short time, and then indicate 9M Ω once the capacitor is charged.
3. A shorted capacitor will show continuous continuity.
4. An open capacitor will show constant 9M Ω .
5. Resistance between each terminal and chassis should be infinite.

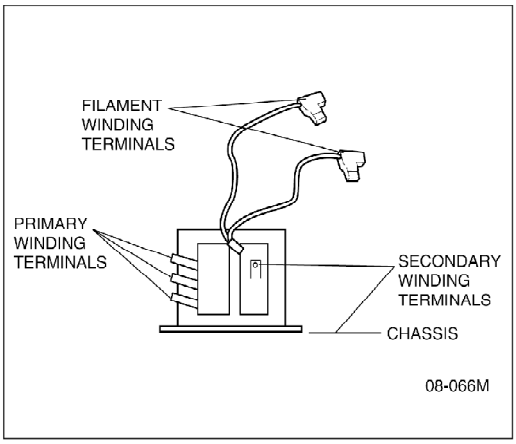
12.5. Magnetron

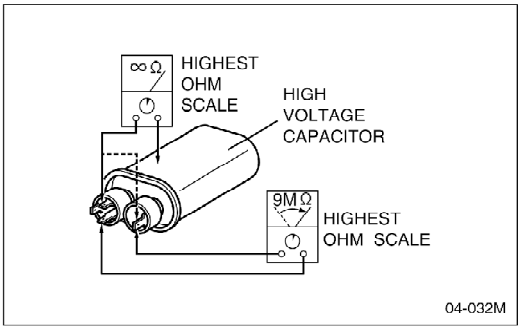
Continuity checks can only indicate an open filament or a shorted magnetron. To diagnose for an openfilament or shorted magnetron.

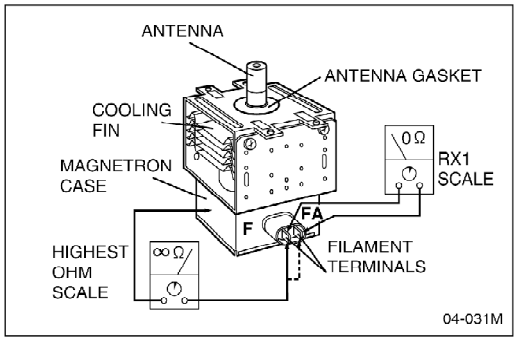
1. Isolate magnetron from the circuit by disconnecting the leads.
2. A continuity check across magnetron filament terminals should

indicate one ohm or less.

3. **A continuity check between each filament terminal and magnetron case should read open.**







12.6. Diode

1. **Isolate the diode from the circuit by disconnecting the leads.**
2. **With the ohmmeter set on the highest resistance scale, measure the resistance across the diode terminals. Reverse the meter leads and again observe the resistance reading. Meter with 6V, 9V or higher voltage batteries should be used to check the front-to-back resistance of the diode, otherwise an infinite resistance may**

be read in both directions. A normal diode's resistance will be infinite in one direction and several hundred k Ω in the other direction.

12.7. Membrane key board (Membrane switch assembly)

Check continuity between switch terminals, by tapping an appropriate pad on the key board. The contacts assignment of the respective pads on the key board is as shown in digital programmer circuit.

12.8. Protector diode

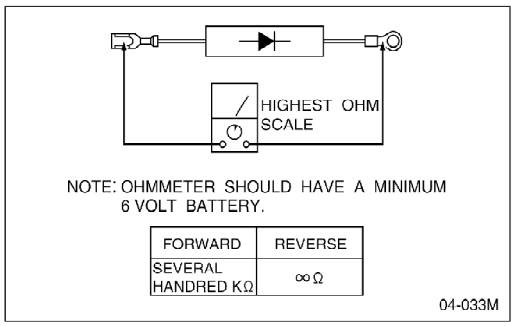
1. Isolate the protector diode assembly from the circuit by disconnecting its leads.
2. With the ohmmeter set on the highest resistance scale, measure the resistance across the protector diode terminals. Reverse the meter leads and again observe the resistance reading. A normal protector diode's resistance will be infinite in both directions. It is faulty if it shows continuity in one or both directions.

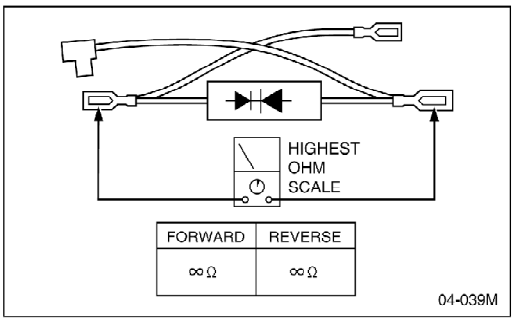
12.9. Temp sensor (Thermal protector)

A temp sensor is mounted on exhaust guide. Its purpose is to automatically shut off the oven in case the cavity overheats for any reason. / The thermal protector will operate at 257°F (125°C). / The device is connected to the DPC on touch control models. When the thermal protector exceeds its temperature it will turn off the power to oven cavity and display will go to reset mode. The cooking program can be reset after cool-down.

THERMISTOR RESISTANCE VALUE

30K — 120K at 10°C — 30°C (50°F — 86°F)





13. MEASUREMENTS AND ADJUSTMENTS

13.1. Adjustment of the secondary interlock switch (SAFETY SWITCH B) (Right and Left side)

1. **Switch operation / When the door is slightly opened, the secondary interlock switch opens the main circuit. The movement of the door from the closed position to the operation position (shown as liter) of the switch when it opens the main circuit, must maintain within following tolerances.**
   SECONDARY INTERLOCK SEITCH (liter) = 3 mm — 5 mm / (When secondary interlock switch opens the main circuit)

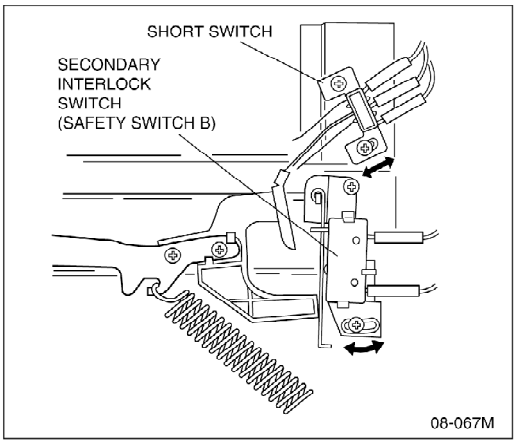
NOTE:
Make sure that primary interlock switch turns off prior to the secondary interlock switch when the door is gradually opened.

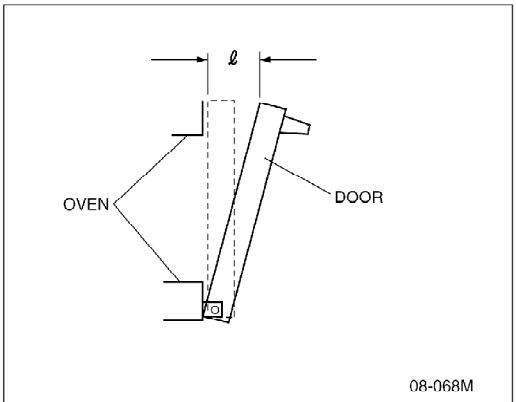
2. **How to adjust secondary interlock switch / Loosen 2 screws which secure the secondary interlock switch bracket to the bracket of the oven assembly and then adjust the secondary interlock switch bracket by moving it to either direction as shown in figure.**

13.2. Adjustment of the Short Switch (MONITOR SWITCH) (Right and Left side)

1. **When the door is slightly opened, the Short Switch opens the main circuit and closes the contacts for short circuit. The movement of door from its closed position to open position at which the Short Switch contacts open the main circuit (shown as liter) must maintain within 8 mm — 11 mm and at which the switch contacts close the short circuit should be 20mm — 35 mm.**

2. How to adjust / Loosen the 2 screws holding the short switch to the short switch bracket, and then adjust the safety switch A by moving it to either direction as shown in figure.



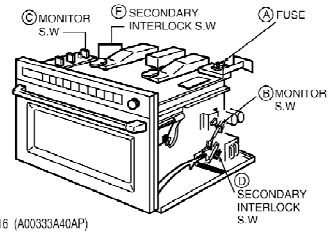


To measure " ℓ ", use stainless steel ruler is convenient which available from spare part route. (Part No.A13005-150)

— For USA models only —

WARNING — FOR CONTINUED PROTECTION AGAINST EXCESSIVE RADIATION EMISSION REPLACE ONLY WITH THE SAME TYPE COMPONENT MARKED BY "⚠" WHEN REPLACING FUSE CHECK OPERATION OF DOOR INTERLOCK AND INTERLOCK MONITOR CIRCUIT AS MARKED BY "⚠" AND REPLACE ANY FAULTY COMPONENTS.

LOCATION OF COMPONENTS	NE-3280		NE-2180		
	TERMINAL HOUSING		TERMINAL HOUSING		CHECK WHICH FUSE IS BLOWN : (DISTINGUISHED BY COLOR OF PLASTIC TERMINAL HOUSING)
	BLACK	WHITE	BLACK	WHITE	
A	⚠	⚠	—	—	FUSE : TYPE MDA/RATED 20A 250V (ANE6595P40AP)
	—	—	⚠	⚠	FUSE : TYPE MDA/RATED 15A 250V (ANE6230P30AP)
B	—	⚠	—	⚠	MONITOR S.W. (RIGHT) :TYPE303GP (A61583030GP)
C	⚠	—	⚠	—	MONITOR S.W. (LEFT) :TYPE305GP (A61583050GP)
D	—	—	⚠	⚠	SECONDARY INTERLOCK S.W. (RIGHT) : TYPE V-15G-3C26 (ANE6142-F60)
	⚠	⚠	—	—	SECONDARY INTERLOCK S.W. (RIGHT) : TYPE A-20G7-3C-108 (A61423030GP)
E	—	—	⚠	⚠	SECONDARY INTERLOCK S.W. (LEFT) : TYPE V-15G-3C26 (ANE6142-F60)
	⚠	⚠	—	—	SECONDARY INTERLOCK S.W. (LEFT) : TYPE A-20G7-3C-108 (A61423030GP)



U.S.P4942516 (A00333A40AP)

13.3. Adjustment of the primary interlock switch (SAFETY SWITCH A) (Right and Left side)

1. Switch operation / When the door is slightly opened, the contacts of primary interlock switch opened to give digital programmer circuit the information that the door is opend. The allowable

movement of the door from the closed position to the operating position (shown as liter) of the switch when it opens the circuit, is specified as follows; / PRIMARY INTERLOCK SWITCH (liter) = 1 mm — 3 mm / (When primary interlock switch opens the circuit)

NOTE:
Make sure that primary interlock switch turn off prior to the secondary interlock switch when the door is gradually opened.

2. How to adjust primary interlock switch / Loosen 2 screws which secure the primary interlock switch bracket to the bracket of the oven assembly and then adjust the primary interlock switch bracket by moving it to either direction as shown in figure.

13.4. Measurement of microwave output

The output power of the magnetron can be determined by performing IEC standard test procedures. However, it is possible to test the magnetron by following procedure outlined below. / Necessary equipement:

- 1 litre beaker
- Glass thermometer
- Wrist watch or stopwatch

NOTE:
Check the line voltage under load to ensure it meets specifications. Low voltage condition will cause a reduction in magnetron output. Temperature readings and heating time, should be as accurate as possible.

Output power performance test procedure.

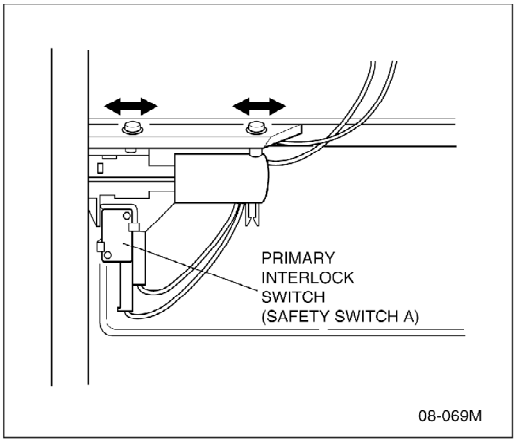
1. Fill the beaker with exactly one litre of tap water. Stir the water using the thermometer and note the temperature. (Record as T1)

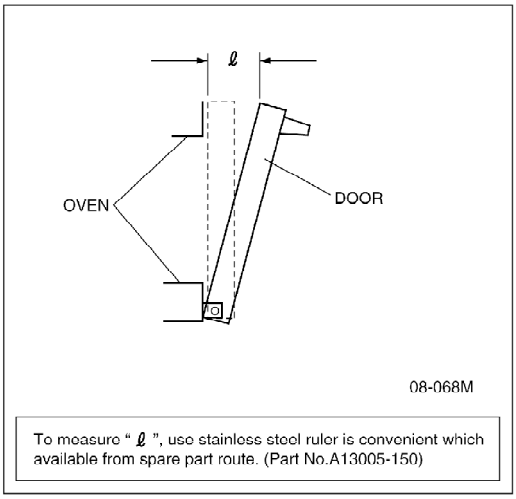
2. Place the beaker in the center of cook plate. Set the oven for High power and heat for exactly one minute.

3. After completion of the heating cycle, stir the water again with the thermometer and note the temperature. (Record as T2)

The normal temperature rise (T2 — T1) at High power position for each models is as shown in following table.

Model	Temperature Rise (1 liter — 1 Min.)
NE-3280	Min. 27.4°C
NE-2180 / NE-2180C	Min 18°C





To measure " ℓ ", use stainless steel ruler is convenient which available from spare part route. (Part No.A13005-150)

14. PROCEDURE FOR MEASURING RADIATION LEAKAGE

WARNING

Check for radiation leakage after every servicing. / Should the leakage be more than 2 mW/square centimeter (1mW/square centimeter for Canada) infrom PASC, PSC, or PCI immediately. Aftr repairing or replacing any radiation safety device, keep a written record for future reference, as required by D.H.H.S. and Health and Welfare Canada regulation. This requirement must be strictly observed. In addition, the leakage reading must be recorded on the service repair ticket while in the customer's home.

NOTE:

The U.S.government standard is 5mw/square centimeter while in the customer's home. 2mw/

square centimeter stated here is Panasonic's own voluntary standard.

14.1. Equipment

- Electromagnetic radiation monitor
- Glass thermometer 212°F or 100°C
- 600cc glass beaker

14.2. Procedure for measuring radiation leakage

Note before measuring

1. **Do not exceed meter full scale deflection Leakage monitor should initially be set to the highest scale.**
2. **To prevent false readings the test probe should be held by the grip portion of the handle only and moved along the shaded area shown in Figure right no faster than 1 inch/sec (2.5cm/sec)**
3. **Leakage with the outer panel removed less than 5mw/square centimeter**
4. **Leakage for a fully assembled oven with door normally closed less than 2mw/square centimeter**
5. **Leakage for a fully assembled oven [Before the interlock switch (primary) is interrupted] while pulling the door less than 2mw/ square centimeter**

1. **Pour 275±15cc (9ozs ±1/2oz) of 20 ± 5°C (68 ± 9°F) water in a beaker which is graduated to 600cc, and place the beaker in the center of the oven.**
2. **Set the radiation monitor to 2450MHz and use it following the manufactuer's recommended test procedure to assure correct results.**
3. **When measuring the leakage, always use the 2 inch (5cm) spacer supplied with the probe.**
4. **Press the start button and with the magnetron oscillating, measure the leakage by holding the probe perpendicular to the surface being measured.**

1. **Measurement with the outer panel removed. / Whenever you replace the magnetron, measure for radiation leakage before the**

outer panel is installed and after all necessary components are replaced or adjusted. Special care should be taken in measuring around the magnetron.

WARNING
Avoid contacting any high voltage parts.

2. **Measurements with a fully assembled oven. / After all components, including the outer panel are fully assembled, measure for radiation leakage around the door periphery, the door viewing window, the exhaust opening and air inlet openings.**

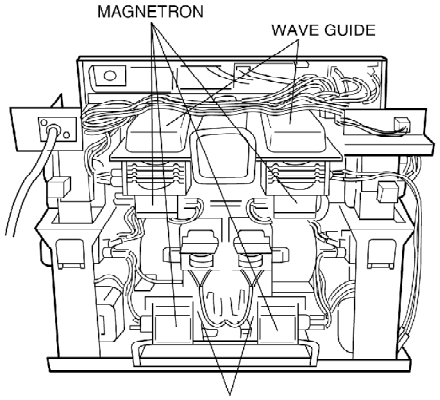
14.3. Record keeping and notification after measurement

1. **After any adjustment or repair to a microwave oven, a leakage reading must be taken. Record this leakage reading on the repair ticket even if it is zero. / A copy of this repair ticket and the microwave leakage reading should be kept by repair facility.**
2. **Should the radiation leakage be more than 2mw/square centimeter after determining that all parts are in good condition, functioning properly, and genuine replacement parts as listed in this manual have been used, immediately notify PASC or PSC.**

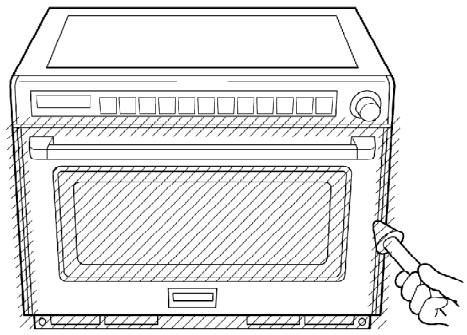
14.4. At least once a year, have the radiation monitor checked for calibration by its manufacturer.

WARNING

AVOID CONTACTING ANY HIGH VOLTAGE PARTS.



03-053M



03-050M

MOVE PROBE ALONG SHADED AREA (////) AROUND EXHAUST OPENINGS (as shown) AND AROUND AIR INLET OPENING

15. TROUBLESHOOTING GUIDE

CAUTION

1. Check grounding before checking for trouble.
2. Be careful of the high voltage circuit.
3. Discharge high voltage capacitor.
4. When checking the continuity of the switches or the high voltage transformer, disconnect one lead wire from these parts and then checl with the AC plug removed. To do otherwise may result in a false reading or damage to your meter.
When disconnecting a plastic connector from a terminal, you must hold the plastic connector instead of the lead wire and then disconnect lead wire may be open or the connector cannot be removed.
5. Be sure to ground any static electric charge built up in your body, before handling the D.P.C.
6. A 208-230V AC is present at the shaded area ( ) of the power supply circuit board (Terminals of power relays and primary circuit of low v transformer). When troubleshooting, be cautious of possible electrical shock hazard.

First of all operate the microwave oven following the correct operating procedures described on pages 4 of this service manual in order to find the exact cause of any trouble.

NOTE:
If the unit shows faulty symptom as shown below, check the parts listed in possible cause column depending on failure indication e.g. F81, F82 in the display.

[TROUBLE] Oven does not operate at all or oven does not start cooking. NE-3280

DISPLAY	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE IN
F33	Open temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure 3. Loose connector CN5	It is appeared when fail occured.
F34	Short temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure	It is appeared when fail occured.
F44		1. Shorted membrane switch	It is appeared 2 minutes failure occured.
F01 / (With continuous beep sounds)	Exhaust temperature exceeds 120°C	1. Burning food in the oven due to over cook	It is appeared when exh temperature exceeds ab 120°C.
F03	Input voltage exceed / + 12.5%	1. Increase in power source voltage	It is appeared when the plugged in. Note that it normal operation mode tapping the STOP pad.
F04	Input voltage is less than — 12.5%	1. Decrease in power source voltage	It is appeared when the plugged in. Note that it normal operation mode tapping the STOP pad.
F05	Memory failure	1. Digital programmer circuit failure	
No display	1.25A fuse blown	1. Low-Voltage transformer failure	
No display	1.25A fuse is OK	1. Thermal cutout failure 2. Low voltage transformer failure 3. Digital programmer circuit failure	
F81	No voltage supply to high voltage trans. (lower/left)	1. Relay failure RY-3 (A) 2. Loose connector CN256, CN257 3. Digital programmer circuit failure	It is appeared when fail occured.

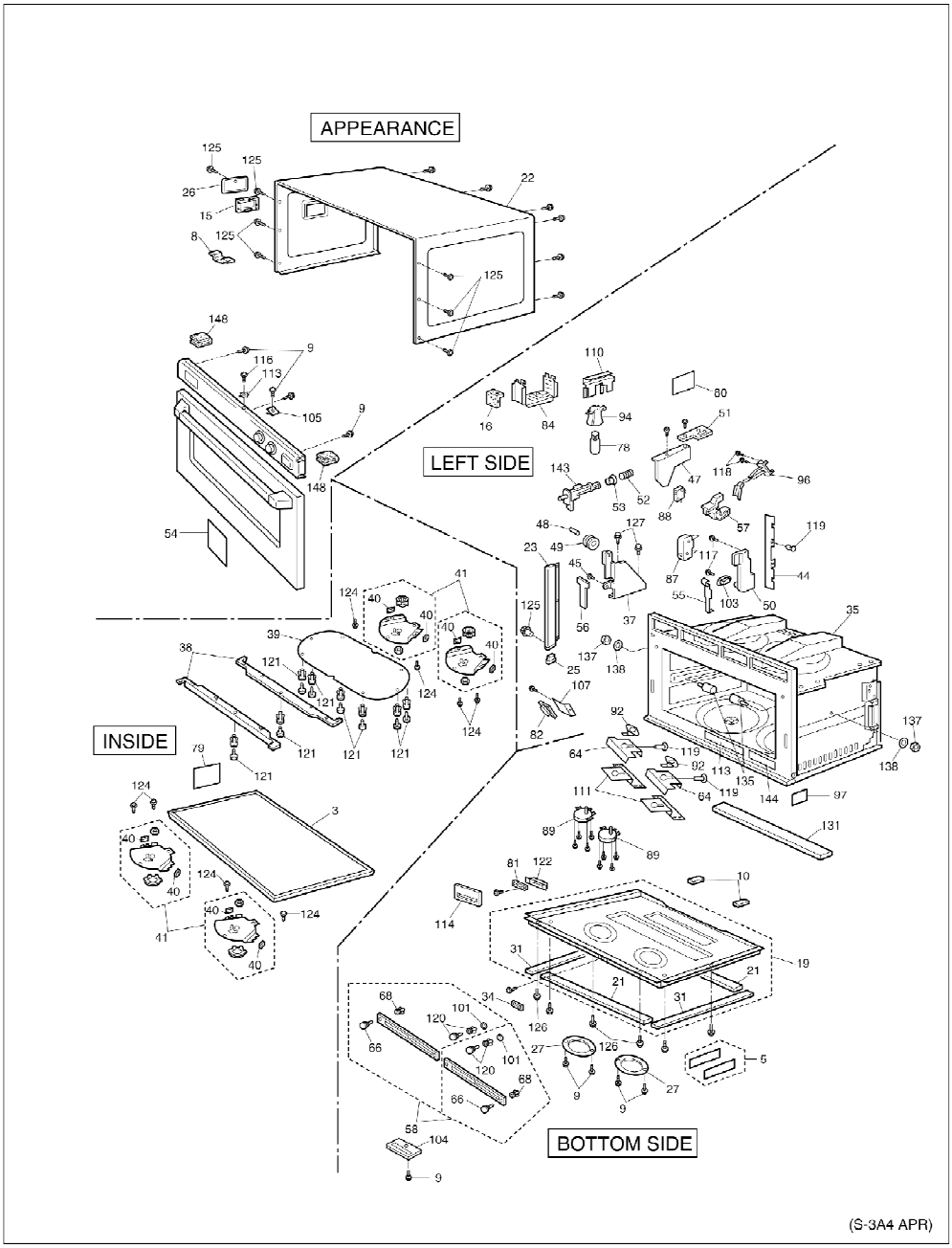
DISPLAY	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE IN
F82	No voltage supply to high voltage trans. (lower/right)	1. Relay failure RY-5 (B) 2. Loose connector CN258, CN259 3. Digital programmer circuit failure	It is appeared when fail occured.
F83	No voltage supply to high voltage trans. (upper/left)	1. Relay failure RY-7 (C) Loose connector CN260, CN261 2. Digital programmer circuit failure	It is appeared when fail occured.
F84	No voltage supply to high voltage trans. (upper/right)	1. Relay failure RY-9 (C) Loose connector CN262, CN263 2. Digital programmer circuit failure	It is appeared when fail occured.
F86	Shorted contacts of RY-3	1. Relay failure RY-3 (A) 2. Digital programmer circuit failure	It is appeared when fail occured.
F87	Shorted contacts of RY-5	1. Relay failure RY-5 (B) 2. Digital programmer circuit failure	It is appeared when fail occured.
F88	Shorted contacts of RY-7	1. Relay failure RY-7 (C) 2. Digital programmer circuit failure	It is appeared when fail occured.
F89	Shorted contacts of RY-9	1. Relay failure RY-9 (D) 2. Digital programmer circuit failure	It is appeared when fail occured.

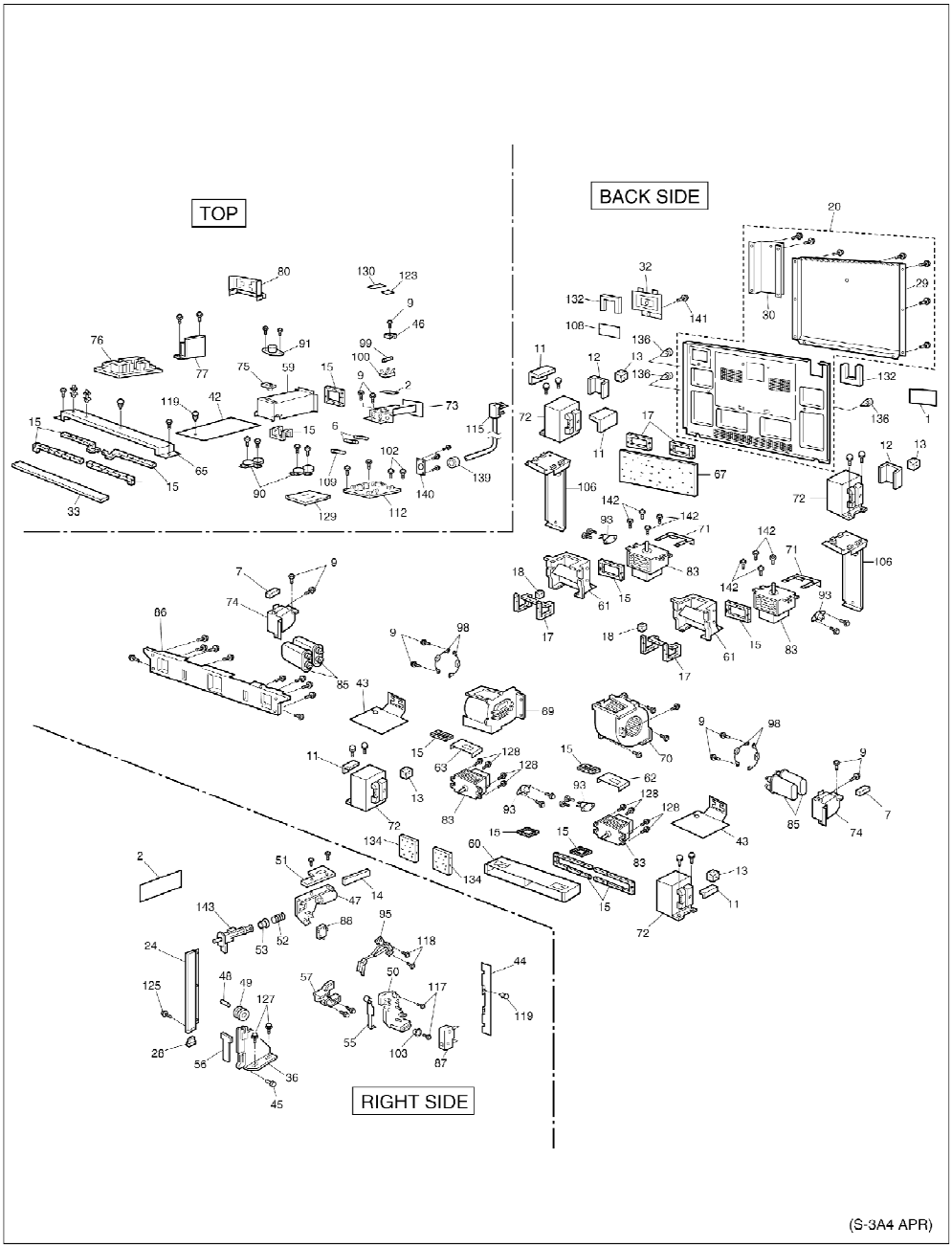
[TROUBLE] Oven does not operate at all or oven does not start cooking. NE-2180, NE-2180C

DISPLAY	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE IN
F33	Open temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure 3. Loose connector CN5	It is appeared when fail occured.
F34	Short temperature sensor (exhaust)	1. Temperature sensor failure 2. Digital programmer circuit failure	It is appeared when fail occured.
F44		1. Shorted membrane switch	It is appeared 2 minutes failure occured.
F01 / (With continuous beep sounds)	Exhaust temperature exceeds 120°C	1. Burning food in the oven due to over cook	It is appeared when exh temperature exceeds ab 120°C.
F03	Input voltage exceed / + 12.5%	1. Increase in power source voltage	It is appeared when the plugged in. Note that it normal operation mode tapping the STOP pad.
F04	Input voltage is less than — 12.5%	1. Decrease in power source voltage	It is appeared when the plugged in. Note that it normal operation mode tapping the STOP pad.
F05	Memory failure	1. Digital programmer circuit failure	
No display	1.25A fuse blown	1. Low-Voltage transformer failure	
No display	1.25A fuse is OK	1. Thermal cutout failure 2. Low voltage transformer failure 3. Digital programmer circuit failure	
F81	No voltage supply to high voltage transformer. (left)	1. Relay failure RY-3 (A) 2. Loose connector CN256, CN257 3. Digital programmer circuit failure	It is appeared when fail occured.

DISPLAY	CONDITIONS	POSSIBLE CAUSE	TIMING OF FAILURE IN
F84	No voltage supply to high voltage transformer. (right)	1. Relay failure RY-9 (C) 2. Loose connector CN262, CN257 3. Digital programmer circuit failure	It is appeared when fail occured.
F86	Shorted contacts of RY-3	1. Relay failure RY-3 (A) 2. Digital programmer circuit failure	It is appeared when fail occured.
F89	Shorted contacts of RY-9	1. Relay failure RY-9 (D) 2. Digital programmer circuit failure	It is appeared when fail occured.

16. EXPODED VIEW AND PARTS LIST


APPEARANCE
LEFT SIDE
INSIDE
BOTTOM SIDE
(S-3A4 APR)



17. PARTS LIST

NOTE

When ordering replacement part(s), please use part number(s) shown in this parts list. / Do not use description of the part. / Importan safety notice: / Components identified by ⚠ mark have special characteristics important for safety. / When replacing any of these components, use only manufacturere's specified parts.

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
1	ANE00068U0CP	CAUTION LABEL	1	NE-2180C
1	A00063040AP	CAUTION LABEL	1	NE-3280,NE-2180
2	A00333A40AP	FUSE LABEL	1	NE-3280,NE-2180
2	A00333570CP	FUSE LABEL	1	NE-2180C
3	A010T3030GP	SHELF	1	
4	A02393A80BP	CORD LABEL	1	NE-3280,NE-2180
5	A05243A40AP	NAME LABEL	1	NE-3280
5	A05243A60AP	NAME LABEL	1	NE-2180
5	A05243A60CP	NAME LABEL	1	NE-2180C
6	ANE6595P40AP	FUSE	2	⚠NE-2180(C)(15A)
6	ANE6230P30AP	FUSE	2	⚠NE-3280(20A)
7	ANE0911000DC	CUSHION RUBBER B	1	NE-3280
7	ANE0911000DC	CUSHION RUBBER B	1	NE-3280
8	ANE0911000DF	CUSHION RUBBER B	1	
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	18	NE-3280(FOR TERMINAL PLATE ANTENNA, / MOTOR COVER ,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
9	XYD4+EE12F	SCREW	19	NE-2180(C)(4X12) (FOR TERMINAL PLATE ANTENNA, / MOTOR COVER,SWITCH HOLDER,DIODE, / CAPACITOR BRACKET,ESCUTCHEON BASE,DPC EARTH)
10	ANE0911000EG	CUSHION RUBBER B	2	

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
11	ANE0911000EH	CUSHION RUBBER B	2	NE-2180(C)
11	ANE0911000EH	CUSHION RUBBER B	4	NE-3280
11	ANE0911000EH	CUSHION RUBBER B	2	NE-2180(C)
11	ANE0911000EH	CUSHION RUBBER B	2	NE-2180(C)
12	ANE0911000MG	CUSHION RUBBER B	2	NE-3280
12	ANE0911000MG	CUSHION RUBBER B	2	NE-3280
13	ANE0917000EB	CUSHION RUBBER B	2	
13	ANE0917000EB	CUSHION RUBBER B	2	
13	ANE0917000EB	CUSHION RUBBER B	2	
13	ANE0917000EB	CUSHION RUBBER B	2	
14	ANE0921000CG	CUSHION RUBBER C	1	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
15	ANE000Z000AA	CUSHION RUBBER C	14	
16	ANE0922000JE	CUSHION RUBBER C	1	
17	ANE000Z000AB	CUSHION RUBBER C	2	
17	ANE000Z000AB	CUSHION RUBBER C	2	
17	ANE000Z000AB	CUSHION RUBBER C	2	
18	ANE0924000AB	CUSHION RUBBER C	2	
18	ANE0924000AB	CUSHION RUBBER C	2	
19	A100A3560BP	BASE	1	(NOTE)
20	A100Q3560GP	BACK PANEL	1	
21	A10083030GP	RUBBER FOOT	2	
21	A10083030GP	RUBBER FOOT	2	
22	A10093030GP	CABINET BODY(U)	1	
23	A10133030GP	LEFT SIDE SASH	1	
24	A10143030GP	RIGHT SIDE SASH	1	
25	A10203030GP	SASH RUBBER B	1	LEFT
26	A10263030GP	LAMP COVER	1	
27	A10283030GP	ANTENNA MOTOR COVER	2	
27	A10283030GP	ANTENNA MOTOR COVER	2	
28	A10503030GP	SASH RUBBER A	1	RIGHT
29	A10583560GP	BACK PANEL COVER A	1	
30	A10593560GP	BACK PANEL COVER B	1	
31	A10943030GP	RUBBER FOOT B	2	
31	A10943030GP	RUBBER FOOT B	2	
32	ANE11548U0AP	BACK PANEL COVER	1	
33	A11743060GP	SPACER	1	
34	A16163040AP	PANEL B(U)	1	
35	A200A3A40AP	OVEN	1	
36	A200P3030GP	ROLLER BRACKET A	1	RIGHT
37	A200Q3030GP	ROLLER BRACKET B	1	LEFT
38	A20103030GP	CEILING PLATE B	2	
39	A20113030GP	CEILING PLATE	1	
40	A20193030GP	ANTENNA STOPPER	8	

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
40	A20193030GP	ANTENNA STOPPER	8	
41	A202R3560GP	ANTENNA(U)	4	
41	A202R3560GP	ANTENNA(U)	4	
42	A22173030GP	BARRIER SHEET A	1	
43	A22183030GP	BARRIER SHEET B	2	NE-3280
43	A22183030GP	BARRIER SHEET B	2	NE-3280
44	A22193030GP	BARRIER SHEET C	1	NE-2180(C)
44	A22193030GP	BARRIER SHEET C	2	NE-3280
45	ANE3008P00RN	HINGE PIN	2	
45	ANE3008P00RN	HINGE PIN	2	
46	XWNANE53GV	SPACER	1	
47	A30203030GP	DOOR HOOK A	2	
47	A30203030GP	DOOR HOOK A	2	
48	ANE3033-560	DOOR ROLLER PIN	2	
48	ANE3033-560	DOOR ROLLER PIN	2	
49	ANE3034-560	DOOR GUIDE ROLLER	2	
49	ANE3034-560	DOOR GUIDE ROLLER	2	
50	A31123050GP	DOOR HOOK B	2	NE-2180(C)
50	A31123030GP	DOOR HOOK B	2	NE-3280
51	A31363030GP	HOOK SPACER A	2	
51	A31363030GP	HOOK SPACER A	2	
52	ANE3155-610	SPRING	2	
52	ANE3155-610	SPRING	2	
53	ANE3157-610	PACKING RUBBER	2	
53	ANE3157-610	PACKING RUBBER	2	
54	A31863A40BP	DOOR PANEL	1	NE-3280
54	A31863A60BP	DOOR PANEL	1	NE-2180
54	A31863A60CP	DOOR PANEL	1	NE-2180C
55	A32493030GP	DOOR SWITCH LEVER	2	
55	A32493030GP	DOOR SWITCH LEVER	2	
56	A32523030GP	DOOR ARM SPACER	2	
56	A32523030GP	DOOR ARM SPACER	2	
57	A33373030GP	DOOR ARM LEVER	2	
57	A33373030GP	DOOR ARM LEVER	2	
58	A400B3040AP	AIR FILTER FLAME(U)	2	
59	A400C3040AP	EXHAUST GUIDE B	1	
60	A402N3030GP	EXHAUST GUIDE A	1	
61	A40253030GP	AIR GUIDE A	2	
61	A40253030GP	AIR GUIDE A	2	
62	A40263030GP	AIR GUIDE B	1	
63	A40313030GP	AIR GUIDE C	1	
64	A40423040AP	AIR GUIDE F	2	
64	A40423040AP	AIR GUIDE F	2	
65	A40473560GP	AIR GUIDE E	1	
66	A40923030GP	FILTER HANDLE	2	
66	A40923030GP	FILTER HANDLE	2	
67	A40963030GP	INSULATION SHEET	1	
68	ANE42408U0AP	FILTER HANDLE B	2	

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
68	ANE42408U0AP	FILTER HANDLE B	2	
69	A490W3570AP	FAN MOTOR A	1	NE-3280
69	A490W3590AP	FAN MOTOR A	1	NE-2180(C)
70	A490Y3570AP	FAN MOTOR B	1	NE-3280
70	A490Y3590AP	FAN MOTOR B	1	NE-2180(C)
71	ANE50328U0AP	MAGNETRON BRACKET	2	
71	ANE50328U0AP	MAGNETRON BRACKET	2	
72	A622A3A40AP	H.V.TRANSFORMER	4	⚠NE-3280
72	A622A3A60AP	H.V.TRANSFORMER	2	⚠NE-2180(C)
72	A622A3A40AP	H.V.TRANSFORMER	4	⚠NE-3280
72	A622A3A40AP	H.V.TRANSFORMER	4	⚠NE-3280
73	A600E3030GP	TERMINAL PLATE	1	
73	A600E3030BP	TERMINAL PLATE	1	
74	A600S3030GP	CAPACITOR BRACKET	2	NE-2180(C)
74	A600S3A40BP	CAPACITOR BRACKET	2	NE-3280
75	A601L4000AP	TEMP SENSOR	1	
76	A603M3560BP	P.C. BOARD B(U)	1	NE-3280
76	A603M3580GP	P.C. BOARD B(U)	1	NE-2180(C)
77	A603Y3570AP	L.V.TRANSFORMER(U)	1	⚠
78	A60304080BP	INCANDESCENT LAMP	1	240V/20W
79	ANE6040-730	OVEN LAMP SHEET	2	
80	A61143040AP	MOUNTING BRACKET	1	
80	A61143040AP	MOUNTING BRACKET	1	
81	A605Q3030GP	PUSH SWITCH	1	
82	A605S3030GP	PC BOARD H(U)	1	
83	2M210-M1GL	MAGNETRON	4	⚠NE-2180(C)
83	2M244-M1GL	MAGNETRON	4	⚠NE-3280
83	2M210-M1GL	MAGNETRON	4	⚠NE-2180(C)
83	2M210-M1GL	MAGNETRON	4	⚠NE-2180(C)
84	A60733030GP	OVEN LAMP COVER	1	
85	A60903050GP	H.V.CAPACITOR	4	⚠NE-2180(C)(0.63MF,AC2700V)
85	A63903330GP	H.V.CAPACITOR	4	⚠NE-3280(1.0MF,AC2700V)
86	A61073030GP	PARTS BRACKET B	1	
87	ANE6142-F60	MICROSWITCH	2	⚠NE-2180(C) / V-15G-3C26(SECONDARY INTERLOCK SWITCH)
87	A61423030GP	MICROSWITCH	2	⚠NE-3280(A20G7-3C108) / SECONDARY LATCH SWITCH
88	A61424L0AG	MICROSWITCH	2	⚠V-15G-3C26(PRIMARY INTERLOCK SWITCH)
88	A61424L0AG	MICROSWITCH	2	⚠V-15G-3C26(PRIMARY INTERLOCK SWITCH)
89	A6144-3280	ANTENNA MOTOR	2	⚠LOWER(2.5W)
89	A6144-3280	ANTENNA MOTOR	2	⚠LOWER(2.5W)
90	A61446030AP	ANTENNA MOTOR	2	⚠UPPER(2.5W)
91	A61454000AP	THERMAL CUTOUT	1	⚠FOR OVEN
92	A61454050AP	THERMAL CUTOUT	2	⚠FOR ANTENNA MOTOR
92	A61454050AP	THERMAL CUTOUT	2	⚠FOR ANTENNA MOTOR
93	A61453570CP	THERMAL CUTOUT	4	⚠FOR MAGNETRON
93	A61453570CP	THERMAL CUTOUT	4	⚠FOR MAGNETRON

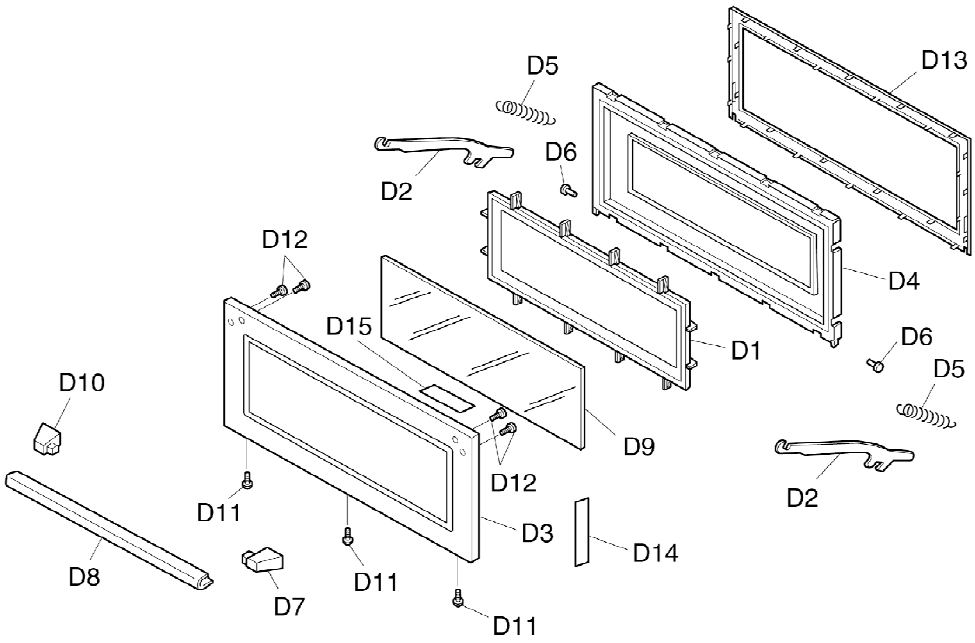
				FOR MAGNETRON

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
93	A61453570CP	THERMAL CUTOUT	4	⚠FOR MAGNETRON
93	A61453570CP	THERMAL CUTOUT	4	⚠FOR MAGNETRON
94	A61524210AA	SOCKET	1	⚠
95	A61583030GP	DOOR SWITCH A	1	⚠RIGHT(MONITOR SWITCH)
96	A61583050GP	DOOR SWITCH B	1	⚠LEFT(MONITOR SWITCH)
97	A61703030GP	INSULATION SHEET B	1	
98	A6202-3280	DIODE,SI	4	NE-3280
98	A62024000AP	DIODE,SI	4	NE-2180(C)
99	A62303A60BP	FUSE	1	⚠NE-2180C(30A)
100	A6231-F50	FUSE HOLDER	1	NE-2180C
101	A62383030GP	SPACER	2	
101	A62383030GP	SPACER	2	
102	XYN5+C8BN	SCREW	2	NE-3280(5X8)FOR NOISE FILTER
103	A64083040AP	WASHER	2	
103	A64083040AP	WASHER	2	
104	A65313030GP	SWITCH HOLDER	1	
105	ANE64086Q0AP	WASHER	1	
106	A65513030GP	H.V.T.MOUNTING	2	
106	A65513030GP	H.V.T.MOUNTING	2	
107	A65613030GP	BUZZER CASE	1	
108	A05103040AP	CAUTION LABEL	1	NE-3280,NE-2180
108	A05103570CP	CAUTION LABEL	1	NE-2180C
109	A65953170GP	FUSE B	1	⚠(1.25A)
110	A66033040AP	OVEN LAMP BRACKET	1	
111	A66263040AP	THERMAL CUTOUT MOUNT	2	
112	A692Y3570AP	NOISE FILTER(U)	1	⚠NE-3280,NE-2180
112	A692Y3570CP	NOISE FILTER(U)	1	⚠NE-2180C
113	ANE01728U0CP	CAUTION LABEL	1	
113	ANE01728U0CP	CAUTION LABEL	1	
114	A83613030GP	SWITCH SPACER		
115	A900C3A40AP	AC CORD W/PLUG(U)	1	⚠NE-3280
115	B900C3570AP	AC CORD W/PLUG(U)	1	⚠NE-2180(C)
116	XTC4+10FC	SCREW	1	4X10(FOR ESCUTCHEON BASE)
117	XYN4+F18S	SCREW	4	4X18(FOR DOOR HOOK B)
117	XYN4+F18S	SCREW	4	4X18(FOR DOOR HOOK B)
118	XYN4+F12S	SCREW	4	4X12(FOR DOOR SWITCH)
118	XYN4+F12S	SCREW	4	4X12(FOR DOOR SWITCH)
119	ANE9080-730	CLIP(YELLOW)	2	NE-2180(C)
119	ANE9080-730	CLIP(YELLOW)	3	NE-3280
119	ANE9080-730	CLIP(YELLOW)	2	NE-2180(C)
119	ANE9080-730	CLIP(YELLOW)	2	NE-2180(C)
119	ANE9080-730	CLIP(YELLOW)	2	NE-2180(C)
120	ANE90828U0AP	CLIP(BLACK)	2	
120	ANE90828U0AP	CLIP(BLACK)	2	
121	ANE9082930AP	CLIP	8	
121	ANE9082930AP	CLIP	8	
121	ANE9082930AP	CLIP	8	
121	ANE9082930AP	CLIP	8	
121	ANE9082930AP	CLIP	8	
121	ANE9082930AP	CLIP	8	

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
122	A98363030GP	CASE	1	
123	A02433560GP	TERMINAL LABEL	1	NE-3240,NE-2140
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
124	XST4+6VS	SCREW	8	4X6(FOR ANTENNA)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
125	XTC4+10BC	SCREW	9	4X10(FOR CABINET BODY LAMP COVER SASH)
126	XTC4+12BK	SCREW	3	4X12(FOR BASE)
126	XTC4+12BK	SCREW	3	4X12(FOR BASE)
127	XTEANE5+10B	SCREW	4	5X10(FOR ROLLER BRACKET)
127	XTEANE5+10B	SCREW	4	5X10(FOR ROLLER BRACKET)
128	XTWANE4+10RU	SCREW	8	4X10(FOR LOWER MAGNETRON)
128	XTWANE4+10RU	SCREW	8	4X10(FOR LOWER MAGNETRON)
128	XTWANE4+10RU	SCREW	8	4X10(FOR LOWER MAGNETRON)
128	XTWANE4+10RU	SCREW	8	4X10(FOR LOWER MAGNETRON)
129	A608E3560GP	P.C. BOARD Q	1	NE-3280
130	ANE0962000ZE	CUSHION RUBBER D	2	
131	A80163060GP	CUSHION SPACER	1	
132	ANE0961000ZL	CUSHION RUBBER D	2	
132	ANE0961000ZL	CUSHION RUBBER D	2	
133	ANE0963000AS	CUSHION RUBBER D	2	
134	A10493030GP	CUSHION RUBBER	2	
134	A10493030GP	CUSHION RUBBER	2	
135	A18593560GP	SHELF SUPPORT	2	
136	A91433040AP	CLIP A	4	NE-2180(C)
136	A91433040AP	CLIP A	4	NE-2180(C)
136	A91433040AP	CLIP A	4	NE-2180(C)
137	XNW5EFN	NUT	2	FOR SHELF SUPPRT
137	XNW5EFN	NUT	2	FOR SHELF SUPPRT
138	XWG5BV	WASHER	2	FOR SHELF SUPPRT
138	XWG5BV	WASHER	2	FOR SHELF SUPPRT
139	A90273A40AP	CORD BUSHING	1	NE-3280
139	A90273040AP	CORD BUSHING	1	NE-2180(C)
140	A90353A40AP	CORD BRACKET	1	NE-3280
140	A90353570CP	CORD BRACKET	1	NE-2180(C)
141	XTT4+8E	SCREW	1	4X8(FOR BACK PANEL COVER)
142	XYEANE5+C16T	SCREW	8	5X16(FOR UPPER MAGNETRON)
142	XYEANE5+C16T	SCREW	8	5X16(FOR UPPER MAGNETRON)
142	XYEANE5+C16T	SCREW	8	5X16(FOR UPPER MAGNETRON)
142	XYEANE5+C16T	SCREW	8	5X16(FOR UPPER MAGNETRON)
143	A30183030GP	DOOR KEY A	2	
143	A30183030GP	DOOR KEY A	2	
144	A04115020CQ	CSA LABEL	1	NE-2180C

NOTE: Please order name label together.

18. DOOR ASSEMBLE

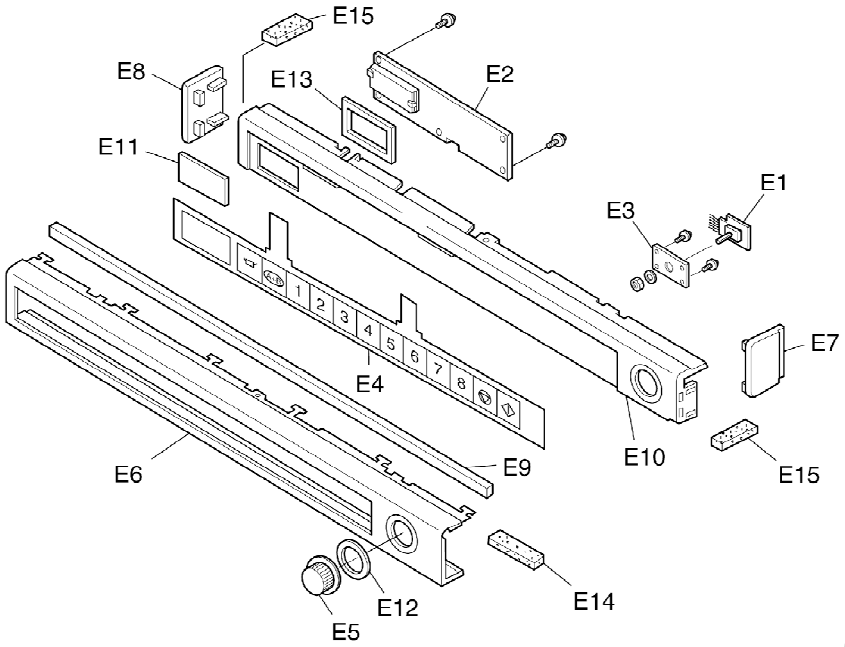


(S-3A4 APR)

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
D1	A30033030GP	DOOR FRAME	1	
D2	A30043030GP	DOOR ARM	2	
D2	A30043030GP	DOOR ARM	2	
D3	A301A3030GP	DOOR A	1	NOTE
D4	A302K3030GP	DOOR E(U)	1	
D5	ANE3009P00RN	DOOR SPRING	2	
D5	ANE3009P00RN	DOOR SPRING	2	
D6	ANE3036P00RN	DOOR ARM PIN	2	
D6	ANE3036P00RN	DOOR ARM PIN	2	
D7	A30703030GP	HANDLE PIECE A	1	
D8	A31343030GP	HANDLE PIECE B	1	
D9	A31463030GP	DOOR SCREEN B	1	
D10	A31473030GP	HANDLE SHEET C	1	
D11	XTC4+10BC	SCREW	3	4X10
D11	XTC4+10BC	SCREW	3	4X10
D11	XTC4+10BC	SCREW	3	4X10
D12	XYEANE4+C16T	SCREW	4	4X16
D12	XYEANE4+C16T	SCREW	4	4X16
D13	A30853030GP	DOOR C	1	
D14	ANE0245X00AP	DHHS LABEL	1	NE-3280,NE2180
D15	ANE01728U0CP	CAUTION LABEL	1	

NOTE: Please order DHHS label together.

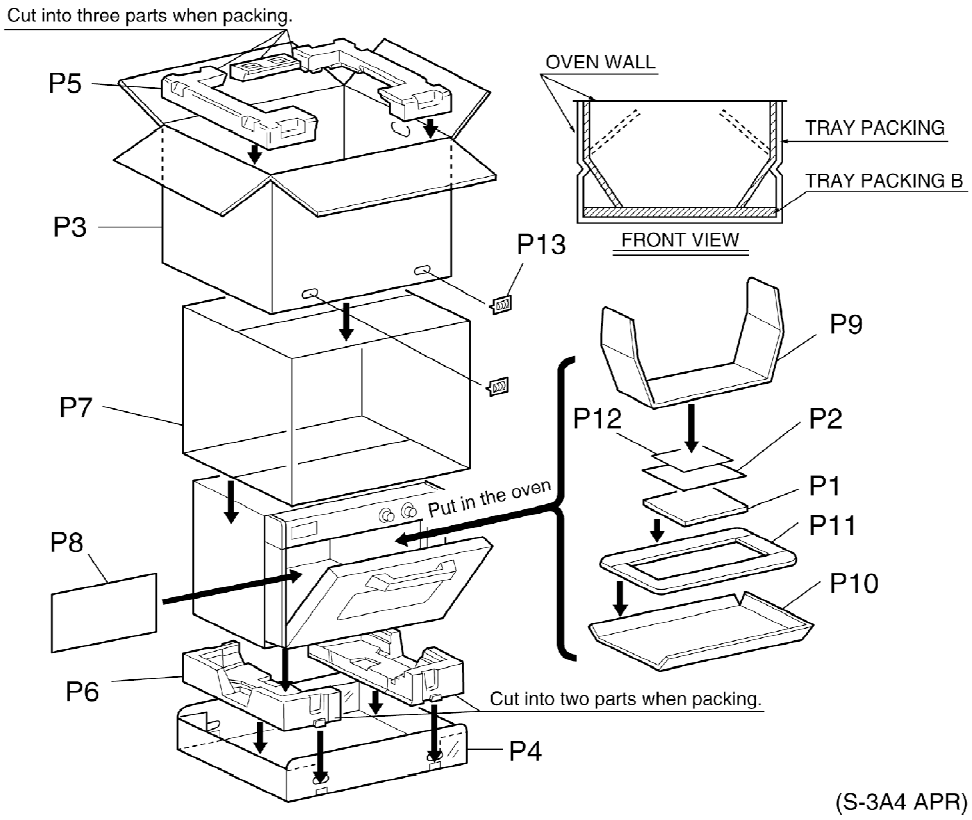
19. ESCUTCHEON BASE ASSEMBLE



(S-3A4 APR)

Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
E1	A03613560GP	TIMER	1	
E2	A603L3590GP	D.P.CIRCUIT(U)	1	⚠RTL(W/COMPONENT)
E3	A63433030GP	TIMER BRACKET	1	NE-3280,NE-2180
E4	A64793570AP	MEMBRANE SWITCH	1	⚠
E5	A800D3060GP	TIMER KNOB	1	
E6	A80013060GP	ESCUTCHEON A	1	NE-3280,NE-2180
E7	A80023030GP	ESCUTCHEON B	1	
E8	A80063030GP	ESCUTCHEON D	1	
E9	A80163030GP	ESCUTCHEON SPACER	1	
E10	A80343060GP	ESCUTCHEON BASE	1	NE-3280,NE-2180
E11	A81263060GP	SMOKE PANEL	1	NE-3280,NE-2180
E12	A82873030GP	SPACER A	1	NE-3280,NE-2180
E13	A83423060GP	CUSHION RUBBER B	1	NE-3280,NE-2180
E14	ANE0911000AB	CUSHION RUBBER B	1	NE-3280,NE-2180
E15	ANE0961000ZE	CUSHION RUBBER D	2	
E15	ANE0961000ZE	CUSHION RUBBER D	2	

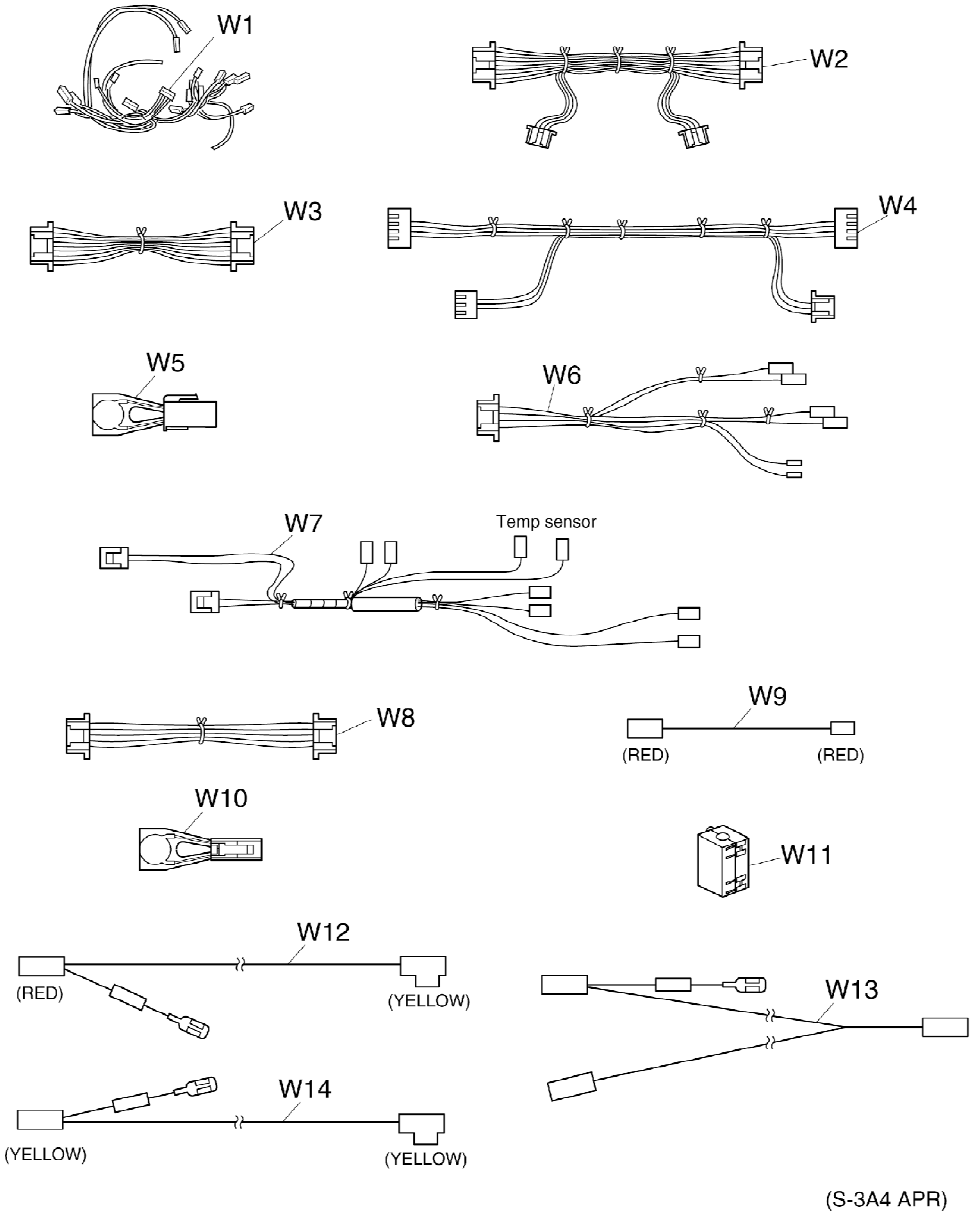
20. PACKING AND ACCESSORIES



(S-3A4 APR)

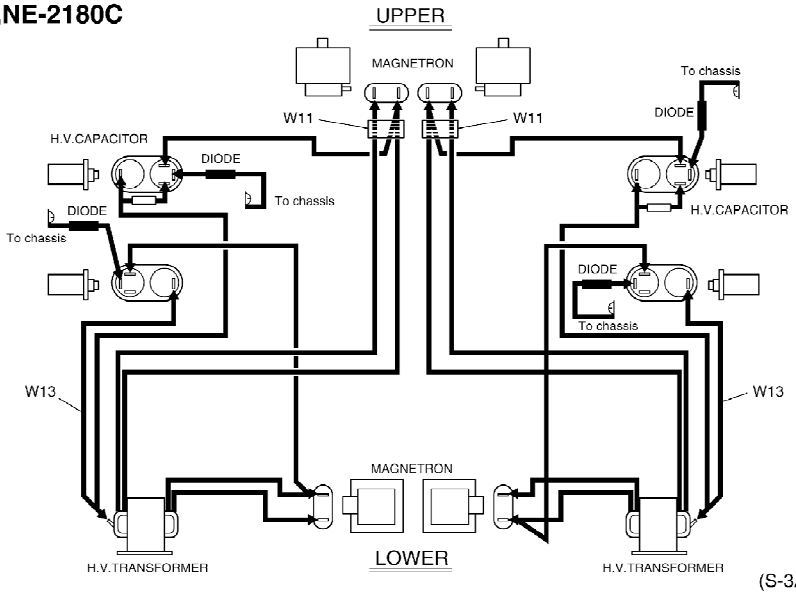
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
P1	A00033A40AP	INSTRUCTION BOOK	1	NE-3280,NE-2180
P1	A00033A60CP	INSTRUCTION BOOK	1	NE-2180C
P2	A00873040AP	MENU CARD	1	
P3	A01023570CP	PACKING CASE,PAPER	1	NE-3280
P3	A01023590CP	PACKING CASE,PAPER	1	NE-2180(C)
P4	A01033030GP	BOTTOM CASE	1	
P5	A01043030GP	UPPER FILLER	1	
P6	A01053030GP	LOWER FILLER	1	
P7	A01063040AP	VINYL COVER	1	
P8	A01073030GP	DOOR SHEET	1	
P9	A01083030GP	TRAY PACKING	1	
P10	A01173030GP	TRAY PACKING B	1	
P11	A012D3050GP	SHELF B	1	
P12	A04203570AP	OPERATING GUIDE	1	
P13	HP-601W	FASTENER	4	

21. WIRING MATERIAL


W1
W2
W3
W4
W5
W6
W7
Temp sensor
W8
W9
(RED)
(RED)
W10
W11
W12
(RED)
(YELLOW)
W13
W14
(YELLOW)
(YELLOW)

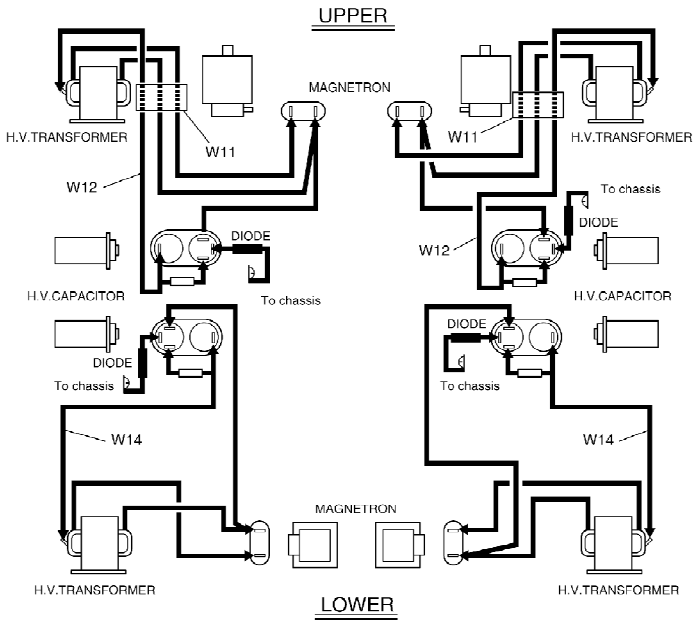
(S-3A4 APR)

NE-2180,NE-2180C



(S-3A4 APR)

NE-3280



(S-3A4 APR)

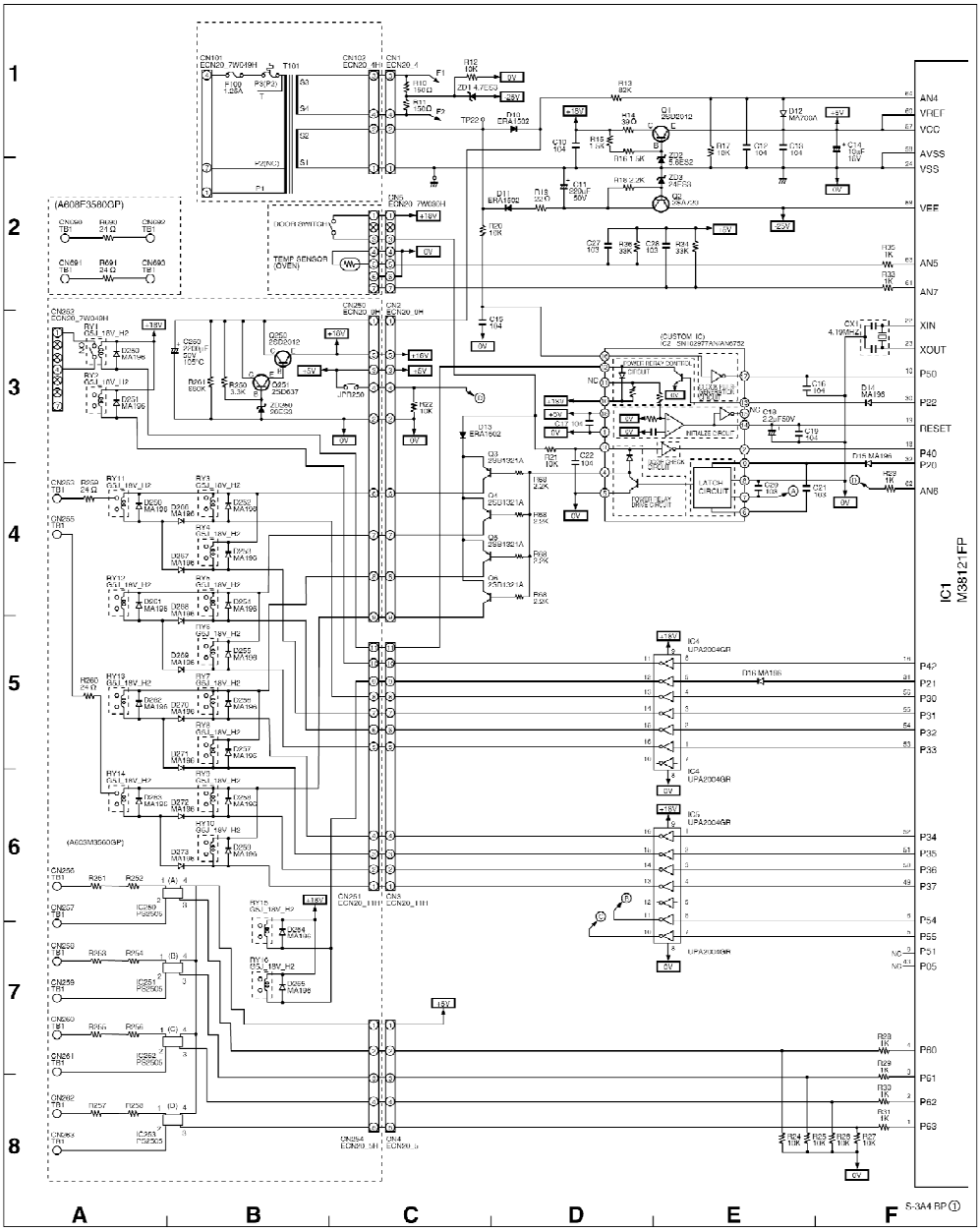
Ref. No.	Part No.	Part Name & Description	Pcs/Set	Remarks
W1	A030A3A40AP	LEAD WIRE HARNESS	1	NE-3280
W1	A030A3A60AP	LEAD WIRE HARNESS	1	NE-2180
W1	A030A3590CP	LEAD WIRE HARNESS	1	NE-2180C
W2	A03603560GP	LEAD WIRE	1	
W3	A03623A40AP	LEAD WIRE	1	NE-3280
W3	A03623560GP	LEAD WIRE	1	NE-2180(C)
W4	A03633560GP	LEAD WIRE	1	
W5	A604Q3570AP	SURGE ABSORBER A	1	NE-2180
W6	A03653560GP	LEAD WIRE	1	
W7	A03693560GP	LEAD WIRE	1	
W8	A03703560GP	LEAD WIRE	1	
W9	A03723A60BP	LEAD WIRE	1	NE-2180
W10	A604Q3590AP	SURGE ABSORBER B	1	NE-2180
W11	A50966520UP	FERRITE CORE	4	NE-2180C
W12	A606W3560GP	PROTECTOR DIODE B	2	NE-3280
W13	A606V3580GP	PROTECTOR DIODE	2	NE-2180(C)
W14	A606V3560GP	PROTECTOR DIODE	2	NE-3280

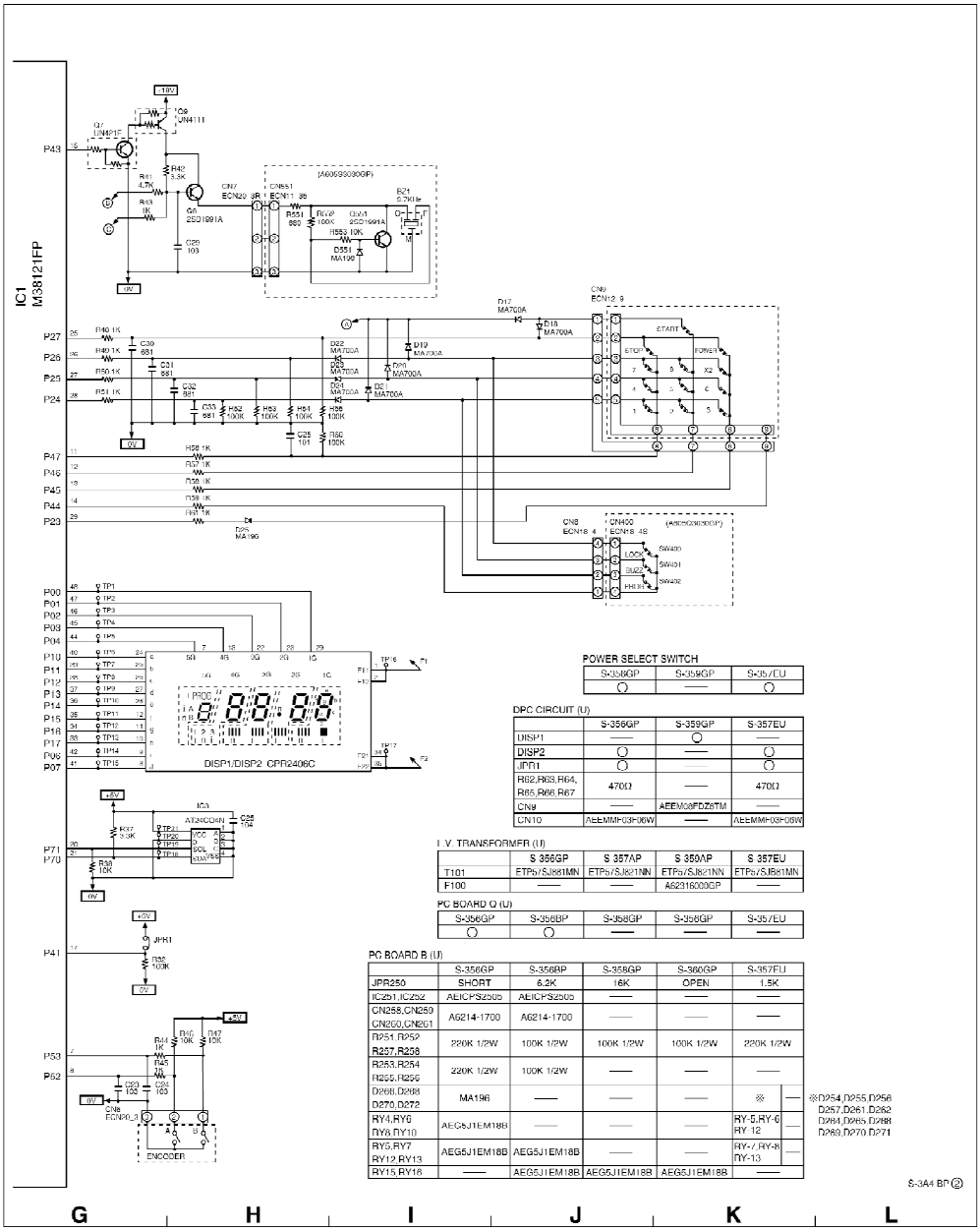
Ref. No.	Part No.	Part Name & Description	Pcs/Ser	
		REF NO.76 P.C.BOARD B (U)		
	AEGHPUG3640		1	J
	XYN3+F8S6		1	3
	2SD2012		1	
	ERDS2TJ163T		1	N
C250	ECA1HHG222E		1	2
CN250	AEEMMD1FF09W		1	9
CN251	AEEMMD7FF11N		1	1
CN252	AEEMMD04907W		1	7
CN254	AEEMMD01F05W		1	5
D250,D251 , D252,D253, D254,D255, D256,D257, D258,D259, D260,D261, D262,D263, D264,D265, D267,D269, D271,D273	MA196-(TA5)	DIODE SI	20	
IC250,IC251, IC252,IC253	AEICPS2505	IC	4	N
IC250,IC253	AEICPS2505	IC	2	N
JPR250	ERDS2TJ163T	CARBON FILM RESISTOR	1	N
JPR250	ERDS2TJ622T	CARBON FILM RESISTOR	1	N
Q251	2SD637-PQRS	TRANSISTOR SI	1	
R250	ERDS2TJ332T	CARBON FILM RESISTOR	1	3
R251,R252, R253,R254, R255,R256, R257,R258	ERDS1TJ104T	CARBON FILM RESISTOR	8	N
R251,R252 , R257,R258	ERDS1TJ104T	CARBON FILM RESISTOR	4	N
R259,R260	ERF15ZXJ240	RESISTOR	2	2
R261	ERDS2TJ684T	CARBON FILM RESISTOR	1	6

Ref. No.	Part No.	Part Name & Description	Pcs/Ser	
RY1	AEBG5B18P-1	POWER RELAY	1	J
RY2,RY3,RY9, RY11,RY14,RY16	AEG5J1EM18B	POWER RELAY	7	J
RY2,RY3,RY5, RY7,RY9,RY11, RY12,RY13,RY14, RY15,RY16	AEG5J1EM18B	POWER RELAY	11	J
		REF NO.82 P.C.BOARD H(U)		
BZ	EFBRL37C20	BUZZER	1	3
CN551	AEEMMB00703R	CONNECTOR	1	3
D551	MA196-(TA5)	DIODE,SI	1	
Q551	2SD639-PQRS	TRANSISTOR SI	1	
R551	ERDS2TJ681T	CARBON FILM RESISTOR	1	6
CN551	ERDS2TJ184T	CARBON FILM RESISTOR	1	1
CN551	ERDS2TJ103T	CARBON FILM RESISTOR	1	1
		REF NO.112 NOISE FILTER (U)		
C1	ECQU2A224MNA	POLYESTER CAOACITOR	1	N
C2,C3	ECKMNA472ME	CERAMIC CAPACITOR	2	J
C2,C3	A6169A20GN	CAPACITOR	2	N
CN1,CN3	A61663560BP	TERMINAL BOARD	2	N
CN9	AEEMMD00703W	CONNECTOR	1	3
D1	ERZC10DK621F	VARISTOR	1	
D2,D3	ERZC10DK112R	VARISTOR	2	
F1,F2	A62316010BP	FUSE HOLDER	4	
F1,F2	A6116-1740	TERMINAL BOARD	2	N
F3	A62314000AP	FUSE HOLDER	1	N
F3	A62316010BP	FUSE HOLDER	4	
L1	A621A3570CP	FILTER COIL	1	N

22. DIGITAL PROGRAMMER CIRCUIT

SCHEMATIC DIAGRAM


1
2
3
4
5
6
7
8
A
B
C
D
E
F
IC1
M38121FP
AN4
VREF
VCC
AVSS
VSS
VEE
AN5
AN7
XIN
XOUT
P50
P22
RESET
P40
P20
AN6
P42
P21
P30
P31
P32
P33
P34
P35
P36
P37
P54
P55
P51
P05
P60
P61
P62
P63
(A608F3580GP)
(A603M3560GP)
TEMP. SENSOR (OVEN)
(CUSTOM IC)
IC4 UPA2004GR
IC5 UPA2004GR
IC6 UPA2004GR
IC260 PS2505
IC261 PS2505
IC262 PS2505
IC263 PS2505
5-3A4 RP①


IC1
M38121FP
DISP1/DISP2 CPR2406C
ENCODER
POWER SELECT SWITCH
S-356GP | S-359GP | S-357EU
DPC CIRCUIT (U)
S-356GP | S-359GP | S-357EU
DISP1 | — | ○ | —
DISP2 | ○ | — | ○
JPR1 | ○ | | ○
R62,R63,R64,R65,R66,R67 | 470Ω | — | 470Ω
CN9 | — | AEEMO6FDZ6TM | —
CN10 | AEEMMH03P06W | — | AEEMMH03P06W
I. V. TRANSFORMER (U)
S 356GP | S 357AP | S 350AP | S 357EU
T101 | ETPb7SJ881MN | ETPb7SJ821NN | ETPb7SJ821NN | ETPb7SJ881MN
F100 | — | — | A52316000GP | —
PC BOARD Q (U)
S-356GP | S-356BP | S-358GP | S-359GP | S-357EU
○ | ○ | — | — | —
PC BOARD B (U)
S-356GP | S-356BP | S-358GP | S-360GP | S-357EU
JPR250 | SHORT | 6.2K | 16K | OPEN | 1.5K
IC251,IC252 | AEICPS2505 | AEICPS2505 | — | — | —
CN258,CN259 CN260,CN261 | A6214-1700 | A6214-1700 | — | — | —
R251,R252 R257,R258 | 220K 1/2W | 100K 1/2W | 100K 1/2W | 100K 1/2W | 220K 1/2W
R253,R254 R255,R256 | 220K 1/2W | 100K 1/2W | — | — | —
D268,D288 D270,D272 | MA196 | — | — | — | ※
RY4,RY6 RY8,RY10 | AEG5J1EM18B | — | — | — | RY-5,RY-6 RY-12
RY5,RY7 RY12,RY13 | AEG5J1EM18B | AEG5J1EM18B | — | — | RY-7,RY-8 RY-13
RY15,RY16 | — | AEG5J1EM18B | AEG5J1EM18B | AEG5J1EM18B | —
※D254,D255,D256 D257,D261,D282 D284,D285,D288 D269,D270,D271
S-3A4 BP②

23. DIGITAL PROGRAMMER CIRCUIT

PARTS LIST

Ref. No.	Part No.	Description	Pcs/set	Remarks
C10,12,13, 15,16,17, 19,22,26, 29	AECF50F104Z	CERAMIC CAPACITOR	10	0.1MF/50V
C11	ECA1HM221B	ELECTROLYTIC CAPACITOR,AL	1	220MF/50V
C14	ECEA1CKA100B	ELECTROLYTIC CAPACITOR,AL	1	10MF/16V
C18	ECEA1HKA2R2B	ELECTROLYTIC CAPACITOR,AL	1	2.2MF/50V
C20,C21,C23, C24,C27,C28	ECBT1E103ZF5	CERAMIC CAPACITOR	6	0.01MF/25V
C25	ECBT1H101KB5	CERAMIC CAPACITOR	1	0.0001MF/50V
C30,C31,C32, C33	ECBT1H681KB5	CERAMIC CAPACITOR	4	680PF
CN1	AEEMMF00F04W	CONNECTOR	1	4PIN
CN2	AEEMMD1FF09W	CONNECTOR	1	9PIN
CN3	AEEMMD7FF11N	CONNECTOR	1	11PIN
CN4	AEEMMF01F05W	CONNECTOR	1	5PIN
CN5	AEEMMD07D07W	CONNECTOR	1	7PIN
CN6	AEEMMF00703W	CONNECTOR	1	3PIN
CN7	AEEMMF00703R	CONNECTOR	1	3PIN RED
CN8	AEEMB04BP0K	CONNECTOR	1	4PIN
CN9	AEEM08FDZ0TN	CONNECTOR	1	
CX1	EFOGC4194T4	RESONATOR	1	4.19MHZ
D10,D11,D13	AEDNERA1502	DIODE,SI	3	1.0A
D12,D18,D22, D23,D24	MA700A-(TA)	DIODE,SI	5	MA700A 0.03A
D14,D15,D16, D17,D19,D20, D21,D25	MA196-(TA5)	DIODE,SI	8	MA196 0.1A
DISP	A64563030GP	FLUORESCENT TUBE	1	CPR2406C
SPACER	A82843030GP	SPACER CUSHION	2	
IC1	AEIC38121472	IC	1	M38121
IC2	AEIC102977AN	IC	1	SN102977AN/AN6752
IC3	AEICAT24C04N	IC	1	AT24C04N
C4,C5	AEICU2004GR	IC	2	A2004G
Q1	2SD2012	TRANSISTOR,SI,2W	1	3MHZ
Q2	2SA720PRTA	TRANSISTOR,SI,400MW	1	200MHZ
Q3,Q4,Q5,Q6	2SB1321A	TRANSISTOR,SI,600MW	4	200MHz
Q7	UN421F	TRANSISTOR,SI,300MW	2	
Q8	2SD1991A	TRANSISTOR,SI,400MW	2	150MHz
Q9	UN4111-(TA)	TRANSISTOR,SI,300MW	1	
R10,R11	ERDS2TJ151T	CARBON FILM RESISTOR	2	150 Ω ,1/4W,5%
R12,17,20, 21,22,24, 25,26,27, 38,39,40, 46,47	ERDS2TJ103T	CARBON FILM RESISTOR	14	10K Ω ,1/4W,5%
R13	ERDS2TJ823T	CARBON FILM RESISTOR	1	82K Ω ,1/4W,5%
R14	ERDS2TJ390T	CARBON FILM RESISTOR	1	39 Ω ,1/4W,5%
R15,16	ERDS2TJ152T	CARBON FILM RESISTOR	2	1.5K Ω ,1/4W,5%
R18,R68X4	ERDS2TJ222T	CARBON FILM RESISTOR	5	2.2K Ω ,1/4W,5%
R19	ERDS2TJ220T	CARBON FILM RESISTOR	1	22 Ω ,1/4W,5%

Ref. No.	Part No.	Description	Pcs/set	Remarks
R23,R28,R29, R33,R35,R45, R48,R51,R56, R57,R58,R59, R61	ERDS2TJ102T	CARBON FILM RESISTOR	19	1.0K Ω ,1/4W,5%
R32,R52,R53, R54,R55,R60	ERDS2TJ104T	CARBON FILM RESISTOR	6	100K Ω ,1/4W,5%
R34,R36	ERDS2TJ333T	CARBON FILM RESISTOR	2	33K Ω ,1/4W,5%
R37,R42	ERDS2TJ332T	CARBON FILM RESISTOR	2	3.3K Ω ,1/4W,5%
R41	ERDS2TJ472T	CARBON FILM RESISTOR	1	4.7K Ω ,1/4W,5%
ZD1	AEDZ4R7ES3T1	ZENER DIODE,SI	1	RD4.7ES3
ZD2	AEDZ5R6ES2T1	ZENER DIODE,SI	1	RD5.6ES2
ZD3	AEDZ24ES3T1	ZENER DIODE,SI	1	RD24ES3